GUAM WATERWORKS AUTHORITY
Office of Compliance and Safety
Suite 200, Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, GU 96913
Phone: (671) 300 6885

August 06, 2021

Tyrone Taitano
Director
Bureau of Statistics and Plans
Guam Costal Management Program
P. O. Box 2950
Hagåtña, GU 96932

VIA HAND DELIVERY AND ELECTRONIC MAIL

Subject: Federal Consistency Certification Application:
Ugum Surface Water Treatment Plant NPDES Permit Renewal for discharge to Ugum River, Guam. NPDES Permit No. GU0020371

Bueñas yan saluda Mr. Taitano,

Under Section 307 of the Coastal Management Act (CZMA), non-federal activities that are conducted under Federal licenses or permits are subject to review by the Government of Guam to insure consistency with CZMA. A proposal to renew a National Pollution Discharge Elimination System ('NPDES") permit for Guam Waterworks Authority (GWA) for the Ugum Surface Water Treatment Plan has been forwarded to Guam EPA for review and approval.

GWA certifies that the Ugum Surface Water Treatment Plant NPDES Permit Renewal for discharge to Ugum River, Guam activity complies with the enforceable policies of Guam Coastal Management Program (GCMP) and will be conducted in a manner consistent with such program.

We understand that your office may circulate this consistency certification among local government agencies that may be affected by the proposed activity. A timely response to this request for certification of compliance would be appreciated.

Please contact this writer by phone at (671)300-6885, or by e-mail at paulkemp@guamwaterworks.org if you have any questions.

Senseramente,

Paul J. Kemp
Assistant General Manager for Compliance and Safety

August 09, 2021
Date

cc:
Becky Mitshele
USEPA Region IX
Water Division, NPDES Permits Section
75 Hawthorne St.
San Francisco, CA 94610

Encl: [1] Assessment Forms
[2] Project Description
[3] Summary of findings.
[4] Draft of NDPES permit.
[5] Draft of NPDES fact sheet.

GUAM COASTAL MANAGEMENT PROGRAM ASSESSMENT FORM

Date of Application: August 06, 2021

Name of Applicant: Guam Waterworks Authority

Address: Gloria B. Nelson Public Service Building
688 Route 15, Suite 200
Mangilao, Guam 96913

Telephone No.: (671) 300-6885

Title of Proposed Project:
NPDES Permit Renewal : Ugum Surface Water Treatment Plant (SWTF)

Other applicable area(s) affected, if appropriate:
N/A

Est. Start Date: Ongoing Est. Duration: Ongoing

AGENCY REPRESENTATIVE INFORMATION

Name & Title: Becky Mitschele , Permit Writer

Agency/Organization: United States Environmental Protection Agency

Address: EPA, Region IX, WTR-2-3
75 Hawthorne St.
San Francisco, CA 94105

Telephone No. during business hours:
(415) 972-3492
Fax (415) 972 3545
Email mitschele,becky@epa.gov

CATEGORY OF APPLICATION (check one only)
( ) I Federal Agency Activity
(**X**) II Permit or License
( ) III Grants & Assistance

TYPE OF STATEMENT (check one only)
(**X**) Consistency
( ) General Consistency (Category I only)
( ) Negative Determination (Category I only)
( ) Non-Consistency (Category I only)

FEDERAL AUTHORITY FOR ACTIVITY
40 CFR 122.21

OTHER TERRITORIAL APPROVALS REQUIRED

Agency	Type of Approval	Application Date	Status
Guam EPA	401 Certification	June 2021	In process

COMPLETE FOLLOWING PAGES FOR BUREAU OF STATICS AND PLANS ONLY:

DATE APPLICATION RECEIVED:

_____

OCRM NOTIFIED: _____ LC. AGENCY NOTIFIED:_____

APPLICANT NOTIFIED: _____PUBLIC NOTICE

GIVEN:_____

OTHER AGENCY REVIEW REQUESTED:

_____

DETERMINATION: ( ) CONSISTENT ( ) NON-CONSISTENT ( ) FURTHER INFORMATION REQUESTED

OCRM NOTIFIED: _____ LIC. AGENCY NOTIFIED: _____
APPLICANT NOTIFIED: _____

ACTION LOG: 1._____
2._____
3._____
4._____
5._____
6._____

DATE REVIEW COMPLETED:

_____

Project Description

The Ugum Surface Water Treatment Facility (SWTF) is the only drinking water treatment plant owned and operated by GWA. The facility is the major source of water supply for the Southern Public Water System, which serves the southern part of the island. Ugum SWTF is designed to produce up to 4 mgd of potable water per day from the river, and discharges, on average 0.02 mgd back to the river over approximately 3 and half hours. (GWA 2014).

GWA upgraded the facility during 2007 to 2011 from a conventional filtration to a microfiltration system, as part of the GWA Stipulated Order for Preliminary Relief. The facility has operated solely on microfiltration since March 28, 2011. In the facility's previous design, the plant did not discharge wastewater.

The facility includes an intake structure in the river, a pumping station next to the riverbank at the intake structure, transmission lines, and a treatment plant. Raw water is pumped from Ugum River to a wetwell via pre-screens, when operational. The screens are back-flushed periodically to remove solids accumulated on the screen and discharged into the Ugum River. After screening, the raw water flows into flocculation tanks and then fed into contact tanks. Supernatant from the contact tanks is sent to membrane filters (Dupont/Memcor CS System) for fine solids removal. Permeate is disinfected with chlorine prior to entering the distribution systems[1].

The membrane filters (Dupont/Memcor System) require regular cleaning (i.e. membrane backwash cycle). The dirty backwash water is transferred to a recycle tank and clarifier to stabilize pH and neutralize the chlorine prior to discharging. The design capacity of the tank is 25,000 gallons, or 0.025 mgd. The facility may discharge multiple times a day if the filters are cleaned more than once per day. Filters are cleaned multiple times only after a high intensity rainfall event occurs after a prolonged dry period.

Solids are collected from the contact tanks and backwash water clarifiers and are sent to the sludge tank. Combined solids from the sludge tank are pumped into the sludge handling system. When the sludge handling system in not in operation, dewatered solids are hauled to a solids handling facility. See process flow diagram for Ugum SWTP.

The Guam Environmental Protection Agency ("GEPA") adopted water quality standards ("WQS") for different surface waterbodies, depending on the level of protection required. The WQS, revised in 2015, provides water quality criteria by surface waterbody classification. The Ugum River is located within the area classified as Category S-2, medium quality surface water(s). Category S-2 waters are used for recreational purposes, including whole body contact recreation, for use as potable water supply after adequate treatment is provided, and propagation and preservation of aquatic wildlife and aesthetic enjoyment. (GEPA 2001).

The facility discharges to the Ugum River at latitude 13° 19'74" N and 144° 44' 57" E through outfall 001, before the convergence with the Talofofo River, which flows into Talofofo Bay. This permit is a reissuance of the permit for the existing facility. Ugum SWTF discharge is very small proportion (.05%) of the Ugum River flow and is further diluted in the floodplain. Ugum SWTP's contribution to the floodplan is considered *de minimis*. No new construction, new pipelines land, habit or hydrology alternations are associated with this permit renewal.

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[1] Chlorine is used in both the membrane system for clean-in-place/maintenance wash and the disinfection system before water enters the distribution system. During the dry season, pre-chlorination at the headworks also can occur.

The Ugum River is impaired due to turbidity, and in 2007, EPA approved a total maximum daily load ("TMDL") for sediment[2]. The TMDL describes the turbidity of the maximum of 240 NTU from 2002 to 2004. The Ugum River turbidity is about twice as high during the wet season.

The discharge consists of clean-in-place washwater or maintenance washwater used to clean the filters. A maintenance wash occurs every 3 days and clean-in-place occurs every 2 weeks during normal operations. The frequency of the maintenance wash is designed to be a short version of the CIP cycle. The chemically treated water cleaning the filters contains sodium hypochlorite, citric acid, and sulfuric acid. The neutralization tanks uses sodium hydroxide and sodium bisulfate to balance the pH and sodium meta-bisulfate to neutralize chlorine prior to discharge. The neutralized chlorine and acid wastes generated by the chemical cleaning process is discharged into the Ugum River downstream of the intake structure. general description of this facility, above, for further information.

Discharge is "batch" analyzed. If the washwater does not meet effluent limits and can't be discharged, the washwater is pumped out by pumper trucks. The permittee then transports the washwater by tanker truck to Inarajan Wastewater Treatment Plant in Inarajan, Guam.

Data from the previous five years indicate that the facility discharged 3 out of the 5 years, 4 times in 2018, twice in 2019, and 12 times in 2020 and is classified as a minor discharger.

Significant changes from the previous permit term includes monitoring of copper, arsenic, cadmuin, chromium III, chromium VI, lead mercury, nickel, selenium, silver, and zinc in the 1st, 3rd and 5th year. This was added because source water often contains metals, which can become concentrated in residuals associated with the treatment process. Monitoring is needed to confirm metal concentrations that may be present in the discharge. Chronic toxicity monitoring will be conducted in the 1st, 3rd, and 5th year for Ceriodaphnai dubia, Pimphales promelas and selenastrum capricornutum. Receiving water hardness monitoring – once a quarter at monitoring locations in the receiving water some water quality standards for metals are hardness dependent. Ammonia and BOD annual monitoring was removed based on the concentrations over the last 10 years are consistently low.

[2] The Ugum River was delisted from Guam's 303(d) list of impaired waters because EPA approved a sediment TMDL in 2007.

Summary of Findings

This facility is subject to Guam review for consistency with the Coastal Zone Management Act. The applicant has reviewed Guam Coastal Management policies; discussion for each policy may be found below:

DEVELOPMENT POLICIES (DP):

DP1. Shore Area Development

Intent: To insure environmental and aesthetic compatibility of shore area land uses.

Policy: Only those uses shall be located within the Seashore Reserve which:

- enhance, are compatible with or do not generally detract from the surrounding coastal area's aesthetic and environmental quality and beach accessibility; or
- can demonstrate dependence on such a location and the lack of feasible alternative sites.

Discussion:
The facility is not located within the Seashore Reserve.

DP2. Urban Development

Intent: To cluster high impact uses such that coherent community design, function, infrastructure support and environmental compatibility are assured.

Policy: Commercial, multi-family, industrial and resort-hotel zone uses and uses requiring high levels of support facilities shall be concentrated within urban districts as outlined on the Land Use Districting Map.

Discussion:
The facility is not in an urban district however the infrastructure support network for the facility has already been developed and is in place.

DP3. Rural Development

Intent: To provide a development pattern compatible with environmental and infrastructure support suitability and which can permit traditional lifestyle patterns to continue to the extent practicable.

Policy: Rural districts shall be designated in which only low density residential and agricultural uses will be acceptable. Minimum lot size for these uses should be one-half acre until adequate infrastructure including functional sewer is provided.

Discussion:
The facility does not interfere with rural districts where low density residential and agricultural uses are prevalent.

DP4. Major Facility Siting

Intent: To include the national interest in analyzing the siting proposals for major utilities, fuel, and transport facilities.

Policy: In evaluating the consistency of proposed major facilities with the goals, policies, and standards of the Comprehensive Development and Coastal Management Plans, the Territory shall recognize the national interest in the siting of such facilities including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment and major reservoir sites.

Discussion:
The facility is existing and has already been sited. The facility was built in 1994 and is a Category S-2, medium quality surface water, as defined by the Guam Environmental Protection Agency ("GEPA") and serves the Southern Public water system.

DP5. Hazardous Areas

Intent: Development in hazardous areas will be governed by the degree of hazard and the land use regulations.

Policy: Identified hazardous lands, including flood plains, erosion-prone areas, air installations, crash and sound zones and major fault lines shall be developed only to the extent that such development does not pose unreasonable risks to the health, safety or welfare of the people of Guam, and complies with the land use regulations.

Discussion:
The facility is not located in a hazardous area.

DP6. Housing

Intent: To promote efficient community design placed where the resources can support it.

Policy: The government shall encourage efficient design of residential areas, restrict such development in areas highly susceptible to natural and manmade hazards, and recognize the limitations of the island's resources to support historical patterns of residential development.

Discussion:
The facility does not include or directly affect local housing.

DP7. Transportation

Intent: To provide transportation system while protecting potentially impacted resources.

Policy: The Territory shall develop an efficient and safe transportation system, while limiting adverse environmental impacts on primary aquifers, beaches, estuaries and other coastal resources.

Discussion:
The facility does not provide transportation for the Territory.

DP8. Erosion and Siltation

Intent: To control development where erosion and siltation damage is likely to occur.

Policy: Development shall be limited in areas of 15% or greater slope by requiring strict compliance with erosion, sedimentation, and land use districting guidelines, as well as other related land use standards for such areas.

Discussion:
The facility is not located on an area with a slope of 15% or greater.

RESOURCES POLICIES (RP):

RP1. Air Quality

Intent: To control activities to insure good air quality.

Policy: All activities and uses shall comply with all local air pollution regulations and all appropriate Federal air quality standards in order to ensure the maintenance of Guam's relatively high air quality.

Discussion:
No significant air pollution will be released by this facility.

RP2. Water Quality

Intent: To control activities that may degrade Guam's drinking, recreational, and ecologically sensitive waters.

Policy: Safe drinking water shall be assured and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuaries, reef, and aquifer areas.

Discussion:
The facility discharges consists of clean-in-place washwater or maintenance washwater used to clean the filters. The facility discharges to Ugum River. This discharge is permitted under the NPDES program by U.S. EPA Region 9 and is required to meet permit conditions such that the

effluent from the facility will meet applicable Guam Water Quality Standards (2015). The effluent limits in the permit will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species, or impair any designated critical habitat.

For further assessment of effluent impacts and determination of permit conditions and limits by EPA, please reference proposed NPDES permit and fact sheets (attached).

RP3. Fragile Areas

Intent: To protect significant cultural areas, and natural marine and terrestrial wildlife and plant habitats.

Policy: Development in the following types of fragile areas shall be regulated to protect their unique character:

- historical and archeological sites
- wildlife habitats
- pristine marine and terrestrial communities
- limestone forests
- mangrove stands and other wetlands

Discussion:

The facility does not interfere with any of the above areas. The effluent limits in the permit will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species, or impair any designated critical habitat. Monitoring data from the Ugum River indicates that there is little to no impact to the receiving water within the surrounding waters.

Bats: The facility is not located in an area designated as critical habitat for bat's food or habitat for the Mariana Fruit Bat (Pteropus *mariannus mariannus*). There is little likelihood that the Mariana Fruit Bat will be present in the action area. The proposed action is related to the discharge of filter backwash water to Ugum River, there is not direct impacts to the species.

Birds: Two Endemic Birds species, the Mariana Gray Swiftlet and the Mariana Common Moorhen

There are two endemic birds listed for Guam: the Mariana Gray Swiftlet and the Guam Micronesian Kingfisher. The Mariana Gray Swiftlet is listed as endangered. The swiftlet nest and roost in limestone cave and feed on insects. The mariana gray swiftlet will have extremely limited exposure to the discharge at the Ugum River. The discharge, Total Suspended Solids (TSS) and turbidity from the discharge will not change the availability of insects that spend a portion of their lifecycle in the Ugum River. The Mariana Gray Swiftlet will not be affected by the facility.

The Mariana Common Moorhen is a non-migratory, found primary at the natural and manmade wetlands. They feed on a variety of plants and insets located in and around the wetland. The Ugum River is one of many surface waters contributing to the floodplain. This action will not result in loss or degradation of the surrounding area. The receiving water data show no significant difference in Total Suspended Solids (TSS) and turbidity as a result of the discharge, so the discharge will not affect the availability of health of aquatic plants, insets and ither invertebrates in the Ugum River. The action will not have an affect on the food source for the Marianna Common Moorhen. The discharge will not affect the Mariana Gray Swiftlet or the Mariana Common Moorhen.

Invertebrates: Mariana eight-spot butterfly and three tree snails

The Mariana eight-spot butterfly was listed as endanger in 2015. The food source, forest herbs, *Elatostema* are found on karst substrate, limestone boulders and *Procris* are found in sunny areas with less water. The area is not suitable habitat for the butterfly and so it is determined that the action will not affect this species.

All listed tree snail species are endangered. The Guam tree snail is found in forest ecosystem, mostly in northern limestone plateau and was found on only 5 of the surveyed plant species. The fragile tree snail needs cool, shaded forest habitat with high humidity and reduced movement of air that present excessive water loss. The area does not provide suitable habitat for these tree snail species. It has been determined that the action will not affect the three snail species.

The three tree species, Fadang, *Phyllanthus saffordii* and the *Tabernaemontana rotensis*, are listed in the U.S. Fish and Wildlife Service designated under the U.S. Endangered Species Act are not associated with wetland or riparian environments that could be adjacent to the Ugum River. The tree species do not occur in the area.

RP4. Living Marine Resources

Intent: To protect marine resources in Guam's waters.

Policy: All living resources within the territorial waters of Guam, particularly corals and fish, shall be protected from over harvesting and, in the case of marine mammals, from any taking whatsoever.

Discussion:
The facility does not harvest or take any aquatic species.

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permit does not directly discharge to areas of essential fish habitat. The proposed permit will not adversely affect essential fish habitat.

RP5. Visual Quality

Intent: To protect the quality of Guam's natural scenic beauty.

Policy: Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws. Visually objectionable uses shall be located to the maximum extent practicable so as not to degrade significant views from scenic overlooks, highways and trails.

Discussion:
The facility does not visually interfere with scenic overlooks, highways or trails.

RP6. Recreation Areas

Intent: To encourage environmentally compatible recreational development.

Policy: The Government of Guam shall encourage development of varied types of recreational facilities located and maintained so as to be compatible with the surrounding environment and land uses, adequately serve community centers and urban areas and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks and historical sites.

Discussion:
The facility is not located on and does not interfere with Territorial recreational facilities.

RP7. Public Access

Intent: To ensure the right of public access.

Policy: The public's right of unrestricted access shall be ensured to all non-federally owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and their public lands; and agreements shall be encouraged with the owners of private and federal property for the provision of releasable access to and use of resources of public nature located on such land.

Discussion:
The facility is not located on a beach area or Territorial recreational area, park, scenic overlook, designated conservation area or otherwise public land. The facility does not hinder access to recreational areas, parks or public lands. Access to the facility itself is restricted to qualified personnel to ensure public safety.

RP8. Agricultural Lands

Intent: To stop urban types of development on agricultural land.

Policy: Critical agricultural land shall be preserved and maintained for agricultural use.

Discussion:
The facility is not located on and does not interfere with agricultural land.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

NPDES PERMIT NO. GU0020371

In compliance with the provisions of the Clean Water Act ("CWA") (Public Law 92-500, as amended, 33 U.S.C. §§ 1251 et seq.), the following discharger is authorized to discharge from the identified facility at the outfall location(s) specified below, in accordance with the effluent limits, monitoring requirements, and other conditions set forth in this permit. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

Permittee Name	Guam Waterworks Authority
Permittee Address	Suite 200, 688 Rt. 15, Gloria B, Nelson Public Service Building Mangilao, GU 96913-6203
Facility Name	Ugum Surface Water Treatment Plant
Facility Location Address	308 Paulino Heights Drive Talofofo, GU 96932
Facility Rating	Minor

Outfall Number	General Type of Waste Discharged	Outfall Latitude	Outfall Longitude	Receiving Water
001	Clean-in-place and filter backwash wastewater	13° 19'74" N	144° 44' 57" E	Ugum River

This permit was issued on:	
This permit shall become effective on:	
Permit reapplication due no later than:	
This permit shall expire at midnight on:	

In accordance with 40 CFR § 122.21(d), the permittee shall submit a new application for a permit at least 180 days before the expiration date of this permit, unless permission for a date no later than the permit expiration date has been granted by the Director.

Signed for the Regional Administrator.

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Tomás Torres, Director
Water Division

TABLE OF CONTENTS

Part I. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

A. Effluent Limits and Monitoring Requirements

1. Effluent Limits – Outfall Number 001
   The permittee is authorized to discharge clean-in-place and chemical enhanced backwash wastewater in compliance with the effluent limits and monitoring requirements specified in Table 1.

2. The discharge of pollutants at any point other than the outfall number 001 specifically authorized in this permit is prohibited.

3. The discharge of toxic substances in toxic amounts, including, but not limited to, pesticides, herbicides, heavy metals, and organic chemicals is prohibited.

4. The discharge shall not cause the following conditions in the receiving water:

   a. Visible floating materials, grease, oil, scum, foam and other floating material degrading water quality or use;

   b. Visible turbidity, deposits, or otherwise adversely affected aquatic life;

   c. Objectionable color, odor, or taste;

   d. Substances, conditions, or combinations that injure or are toxic or harmful to humans, animals, plants or aquatic life;

   e. Substances, conditions or combinations inducing growth of undesirable aquatic life;

   f. Total non-filterable suspended matter at any point to be increased more than 10% from ambient at any time, and the total concentration should not exceed 20 mg/L, except when due to natural conditions,

   g. Temperature to deviate more than 1.0 degree Centigrade from ambient conditions;

   h. pH outside the range of 6.5 to 9.0 standard units,

   i. Orthophosphate concentrations to exceed 0.05 mg/L,

   j. Nitrate-nitrogen and/or ammonia concentrations to exceed 0.2 mg/L,

   k. Turbidity to exceed 1.0 NTU over ambient conditions; and

   l. Concentration of dissolved oxygen to be less than 75% of saturation.

5. The discharge of any radioactive wastes and contaminated radioactive materials is strictly prohibited.

B. Numeric Effluent Limits and Monitoring Requirements – Outfall Number 001

Table 1. Effluent Limits and Monitoring Requirements

Parameter	Maximum Allowable Discharge Limits Concentration and Loading				Monitoring Requirements	
	Average Monthly	Max. Daily	Instantaneous Max.	Units	Frequency	Sample Type(2)
Flow rate	(1)	(1)	—	MGD	Continuous	Metered
pH (hydrogen ion)	Between 6.5 – 9.0 at all times			Std. Units	Continuous	Grab
Turbidity	—	—	12.50	NTU	1x/discharge	Grab
Total suspended solids	30.00 6.26	45.00 9.34(3)	— —	mg/L lbs/day	1x/discharge	Grab
Total dissolved solids	1,000.00 208.63	1,000.00 208.63(3)	—	mg/L lbs/day	1x/discharge	Grab
Chlorine, total residual (TRC)	0.05(4)	0.05(4)	—	µg/L	1x/discharge	Grab
Total recoverable aluminum	— —	1.00 0.21	— —	mg/L lbs/day	1x/discharge	Grab
Metals(5)	—	—	(1)	µg/L	1st, 3rd, 5th year	Grab

Note: 'MGD' indicates units of Million Gallons per Day and 'NTU' is Nephelometric Turbidity Units.
(1) No effluent limit set but monitoring and reporting is required.

(2) Sample type is grab because the discharge occurs in batches and is typically less than 3 hours. However, if multiple batches are discharged per day, the permittee must sample each batch, and if the discharge time exceeds 3 hours, another grab sample must be analyzed.

(3) If daily flow exceeds 0.025 mgd, the maximum daily effluent for total suspended solids is 18.78 lbs/day and 417.25 lbs/day for total dissolved solids. The permittee shall report a sum value for lbs/day for the discharge events exceeding 0.025 mgd.

(4) A TRC grab sample must be taken during the course of the discharge when the concentrations of pollutants are at their highest, usually prior to the batch discharge.

(5) The permittee shall annually monitor for copper, arsenic, cadmium, chromium III, chromium VI, lead, mercury, nickel, selenium, silver, and zinc. All metals shall be reported as total recoverable metal. The permittee shall use U.S. EPA method 1631 for mercury monitoring, with a minimum level of 0.002 µg/L.

D. Chronic Toxicity Effluent Limits and Monitoring Requirements – Outfall Number 001

Table 2. Effluent Limits and Monitoring Requirements for Chronic Toxicity

Parameter	Maximum Allowable Discharge Limits Concentration			Monitoring Requirements	
	Median Monthly	Maximum Daily	Units	Frequency	Sample Type
Chronic Toxicity *Ceriodaphnia dubia* reproduction, Method 1002.0, WC13B	Report (1, 2)	Report (1, 3)	Pass (0) or Fail (1), PE, in % effluent	1st, 3rd, 5th year	Grab

Parameter	Median Monthly	Maximum Daily	Units	Frequency	Sample Type
Chronic Toxicity *Pimphales promelas* growth, Method 1000.0, WCP6C	Report (1, 2)	Report (1, 3)	Pass (0) or Fail (1), PE, in % effluent	1st, 3rd, 5th year	Grab
Chronic Toxicity *Selenastrum capricornutum* growth, Method 1003.0, WGR1E	Report (1, 2)	Report (1, 3)	Pass (0) or Fail (1), PE, in % effluent	1st, 3rd, 5th year	Grab

(1) "Report" means there is no effluent limit for the coded parameter, chronic toxicity, but monitoring and DMR reporting is required. See Endnotes 2 and 3.

(2) Pass–Fail results are coded as **Pass (0)** (TST null hypothesis is rejected and the IWC is declared not toxic) and **Fail (1)** (TST null hypothesis is not rejected and the IWC is declared toxic). For this discharge, the TST null hypothesis (H_o) at the required discharge-specific IWC is: **IWC mean response (100% effluent) ≤ 0.75 × Control mean response**. Rejection of the TST null hypothesis is determined by following the step-by-step instructions in *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document*, Appendix B (EPA 833-R-10-004, 2010; TST Technical Document).

(3) Maximum Daily Effluent result: This is evaluated for each toxicity test conducted for determining the median monthly effluent result. If more than one toxicity test is initiated during the calendar month, then those results shall be reported attached to the DMR form, except that the one toxicity test with a **Fail (1)** and the highest **PE** shall be reported on the DMR form.

E. Sampling

1. Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The Permittee shall identify the effluent sampling location used for each discharge.

2. Samples shall be taken after any in-plant return flows and the last treatment process and prior to mixing of the effluent from the Ugum Water Treatment Facility and the receiving waters, where representative samples of the effluent discharged can be obtained.

3. For intermittent discharges, the permittee shall monitor on the first day of discharge. The permittee is not required to monitor in excess of the minimum frequency required in Table 1. If there is no discharge, the permittee is not required to monitor the effluent. For total residual chlorine, a discrete sample must be taken during the course of the discharge when the concentrations of pollutants are at their highest, usually prior to the batch discharge.

F. General Monitoring and Reporting

1. All monitoring shall be conducted in accordance with 40 CFR § 136 test methods, unless otherwise specified in this permit. For influent and effluent analyses required in this permit, the permittee shall utilize 40 CFR § 136 test methods with MDLs and MLs that are lower than the effluent limits in this permit. For parameters without an effluent limit, the permittee must use an analytical method at or below the level of the applicable water quality criterion for the measured pollutant. If all MDLs or MLs are

higher than these effluent limits or criteria concentrations, then the permittee shall utilize the test method with the lowest MDL or ML. In this context, the permittee shall ensure that the laboratory utilizes a standard calibration where the lowest standard point is equal to or less than the ML. Influent and effluent analyses for metals shall measure "total recoverable metal", except as provided under 40 CFR § 122.45(c).

2. As an attachment to the first DMR, the permittee shall submit, for all parameters with monitoring requirements specified in this permit:

   a. The test method number or title and published MDL or ML,

   b. The preparation procedure used by the laboratory,

   c. The laboratory's MDL for the test method computed in accordance with Appendix B of 40 CFR § 136,

   d. The standard deviation (S) from the laboratory's MDL study,

   e. The number of replicate analyses (n) used to compute the laboratory's MDL, and

   f. The laboratory's lowest calibration standard.

   As part of each DMR submittal, the permittee shall notify EPA of any changes to the laboratory's test methods, MDLs, MLs, or calibration standards. If there are any changes to the laboratory's test methods, MDLs, MLs, or calibration standards, these changes shall be summarized in an attachment to the subsequent DMR submittal.

3. The permittee shall develop a Quality Assurance ("QA") Manual for the field collection and laboratory analysis of samples. The purpose of the QA Manual is to assist in planning for the collection and analysis of samples and explaining data anomalies if they occur. The QA Manual shall be developed (or updated) within 90 days of permit issuance. At a minimum, the QA Manual shall include the following:

   a. Identification of project management and a description of the roles and responsibilities of the participants; purpose of sample collection; matrix to be sampled; the analytes or compounds being measured; applicable technical, regulatory, or program-specific action criteria; personnel qualification requirements for collecting samples;

   b. Description of sample collection procedures; equipment used; the type and number of samples to be collected including QA/Quality Control ("QC") samples; preservatives and holding times for the samples (see 40 CFR § 136.3); and chain of custody procedures;

   c. Identification of the laboratory used to analyze the samples; provisions for any proficiency demonstration that will be required by the laboratory before or after contract award such as passing a performance evaluation sample; analytical method to be used; MDL and ML to be reported; required QC results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike

recoveries, etc.) and acceptance criteria; and corrective actions to be taken in response to problems identified during QC checks; and

d. Discussion of how the permittee will perform data review, report results, and resolve data quality issues and identify limits on the use of data.

4. Throughout all field collection and laboratory analyses of samples, the permittee shall use the QA/QC procedures documented in their QA Manual. If samples are tested by a contract laboratory, the permittee shall ensure that the laboratory has a QA Manual on file. A copy of the permittee's QA Manual shall be retained on the permittee's premises and available for review by regulatory authorities upon request. The permittee shall review its QA Manual annually and revise it, as appropriate.

5. Samples collected during each month of the reporting period must be reported on Discharge Monitoring Report forms, as follows:

   a. For a *maximum daily* permit limit or monitoring requirement when one or more samples are collected during the month, report either:

      The *maximum value*, if the maximum value of all analytical results is greater than or equal to the ML; or
      NODI (Q), if the maximum value of all analytical results is greater than or equal to the laboratory's MDL, but less than the ML; or
      NODI (B), if the maximum value of all analytical results is less than the laboratory's MDL.

   b. For an *average weekly* or *average monthly* permit limit or monitoring requirement when only one sample is collected during the week or month, report either:

      The *maximum value*, if the maximum value of all analytical results is greater than or equal to the ML; or
      NODI (Q), if the maximum value of all analytical results is greater than or equal to the laboratory's MDL, but less than the ML; or
      NODI (B), if the maximum value of all analytical results is less than the laboratory's MDL.

   c. For an *average weekly* or *average monthly* permit limit or monitoring requirement when more than one sample is collected during the week or month, report:

      The *average value* of all analytical results where 0 (zero) is substituted for *NODI (B)* and the laboratory's MDL is substituted for *NODI (Q)*.

6. In addition to information requirements specified under 40 CFR § 122.41(j)(3), records of monitoring information shall include: the laboratory which performed the analyses and any comment, case narrative, or summary of results produced by the laboratory. The records should identify and discuss QA/QC analyses performed concurrently during sample analyses and whether project and 40 CFR § 136

requirements were met. The summary of results must include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, and sample condition upon receipt, holding time, and preservation.

7. The permittee shall electronically submit Discharge Monitoring Reports using NetDMR (http://www.epa.gov/netdmr).

8. Monthly DMRs shall be submitted quarterly, by the 28th day of the month following the previous calendar quarter. For example, the three DMR forms for January, February, and March are due on April 28th. Annual and quarterly monitoring must be conducted starting in the first complete quarter or calendar year following permit issuance. Reporting for annual monitoring is due on January 28th of the following year. A DMR must be submitted for the reporting period even if there was not any discharge. If there is no discharge from the facility during the reporting period, the permittee shall submit a DMR indicating no discharge as required.

9. The permittee shall submit an electronic or paper Discharge Monitoring Report to Guam EPA (i.e. maricar.quezon@epa.guam.gov). Paper DMR forms shall be mailed to:

Guam EPA
Attn: Maricar Quezon, GEPA WW Section
3304 Mariner Avenue, Bldg. 17-3304
Barrigada, Guam 96913

G. Receiving Water Monitoring

1. The permittee shall conduct the monitoring described in Table 3 at a location upstream and downstream of the discharge during the duration of the discharge. The upstream monitoring location (UR-1) shall be a single location immediately upstream of the outfall and the downstream monitoring location (UR-2) shall be a single location at least 200 feet downstream of the outfall. A location map is provided as factsheet attachment A.

2. The receiving water must not exceed narrative water quality standards, as described in I.A, Effluent Limits, above.

3. Receiving water monitoring results shall be submitted along with effluent monitoring information in the facility's DMR, in accordance with Part I. Section E.

Table 3. Upstream and Downstream (UR-1 and UR-2) Water Monitoring Requirements

Parameter	Frequency	Type
Total suspended solids (mg/L)	Once/quarter	Grab
Turbidity (NTU)	Once/quarter	Grab
Hardness (mg/L as CaCO3)[1]	Once/quarter	Grab

[1] The permittee only needs to monitor for hardness at either UR-1 or UR-2.

Part II. SPECIAL CONDITIONS

A. Permit Reopener(s)

1. In accordance with 40 CFR §§ 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Twenty-four Hour Reporting of Noncompliance

1. The permittee shall report any noncompliance which may endanger human health or the environment. The permittee is required to provide an oral report by directly speaking with an EPA or Guam EPA staff person within 24 hours from the time the permittee becomes aware of the noncompliance. If the permittee is unsuccessful in reaching a staff person, the permittee shall provide notification by 9 a.m. on the first business day following the noncompliance to the Wastewater Enforcement Section Manager at 415-947-4179 and to Guam EPA at 671-475-1658.

   The permittee shall follow up with a written submission within five days of the time the permittee becomes aware of the noncompliance. The written submission shall be emailed to R9NPDES@epa.gov and/or the EPA staff person initially notified. The submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. The following shall be included as information which must be reported within 24 hours under this paragraph.

   a. Any unanticipated bypass which exceeds any effluent limit in the permit (see 40 CFR § 122.44(g)).

   b. Any upset which exceeds any effluent limit in the permit.

   c. Violation of a maximum daily discharge limit for any of the pollutants listed by the director in the permit to be reported within 24 hours (see 40 CFR § 122.44(g)).

3. EPA may waive the written report on a case-by-case basis for reports required under paragraph B.2, if the oral report has been received within 24 hours.

C. Whole Effluent Toxicity Requirements

1. Instream Waste Concentration (IWC) for Chronic Toxicity

The chronic toxicity IWC required for the authorized discharge point is expressed as **100 percent (%) effluent** (i.e., 1/S × 100, also 1 part effluent to S−1 parts dilutant or 1 part solute to 0 parts dilutant (1:0) for a total of 1 part).

2. Sampling and Monitoring Frequency

   Toxicity test samples shall be collected for the authorized discharge point at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). The total sample volume shall be determined both by the WET method used (including, for non-continuous discharges, the additional sample volume necessary to complete the toxicity test) and the additional sample volume necessary for Toxicity Identification Evaluation (TIE) studies.

   The permittee shall use the test species, WET method, monitoring frequency, and sample type specified in Part I, Table 2. A split of each effluent sample for toxicity testing shall be analyzed for all other monitored parameters (conventional, non-conventional, and priority toxic pollutants), at the minimum frequency of analysis specified during the reporting period for the month by the effluent monitoring program. All toxicity tests for the month shall be initiated during that calendar month.

3. Chronic Test Species and WET Methods

   For freshwater discharges to freshwater surface waters, test species and short-term WET methods for estimating the chronic toxicity of NPDES effluents are found in the fourth edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002; Table IA, 40 CFR 136). The permittee shall **conduct toxicity tests with the parameter for chronic toxicity required in Part I, Table 2** (e.g., static renewal test with fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0); static renewal test with daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0); or static non-renewal test with green alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0)).

4. Quality Assurance

   a. Quality assurance measures, instructions, and other recommendations and requirements are found in the WET methods manual(s) previously referenced. Additional requirements are specified below.

   b. **Pacific Island Territory NPDES permittees and WET sample hold time.** The WET methods manual hold time for NPDES samples used for toxicity testing begins when the 24-hour composite sampling period is completed, or the last grab sample in a series of grab samples is taken. It ends at the first time of sample use (initiation of toxicity test). 40 CFR 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA. In a June 29, 2015 inter-office memorandum, EPA Region 9

has authorized a hold time variance of up to 72-hours applicable only to Pacific Island Territory permittees **which ship the NPDES sample to the continental U.S. for toxicity testing**, with conditions.

c. The discharge is subject to a determination of rejection or non-rejection of the TST null hypothesis (H_0) from a chronic toxicity test at the required IWC. For statistical flowchart and procedures using the TST statistical approach see Appendix B of *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-004, 2010; TST Technical Document). For the TST statistical approach, the associated value for "Percent (%) Effect" (also called "% Effect" or "PE") at the required IWC is calculated as: % Effect = [(Control mean response − IWC mean response) ÷ Control mean response] × 100.

d. **Controls.** Effluent dilution water and control water should be prepared and used as specified in the applicable WET methods manual. If the dilution water is different from test organism culture water, then a second control using culture water shall also be used. If the effluent sample at the IWC is adjusted using artificial sea salts or a saltwater brine, a "salting up/brine" control shall be prepared and used as specified in the applicable WET methods manual.

e. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

f. If the effluent toxicity test during the reporting period for the month does not meet the Test Acceptability Criteria (TAC) described in the WET method, then the permittee shall resample and retest within 14 days. The results of this retest shall only replace that effluent toxicity test that did not meet TAC during the reporting period for the month.

g. In addition to Total Alkalinity, Conductivity, and Total Hardness, when preparing effluent samples for toxicity testing using *Ceriodaphnia dubia* reproduction Method 1002.0, the Major Ions (Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, SO_4^{2-}, and HCO^{3-}/CO_3^{2-}) shall be well characterized (and available for DMR reporting when requested by EPA) for the effluent IWC, dilution water, and culture water used for toxicity testing. See Mount DR, Erickson RJ, Forsman BB, and Norberg-King TJ. 2019. Chronic toxicity of major ion salts and their mixtures to *Ceriodaphnia dubia*. *Environ Toxicol Chem* 38:769-783.

h. **Removed Toxicants (chlorine, ammonia).** If the discharged effluent is chlorinated, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by EPA. Ammonia shall not be removed from the effluent sample prior to toxicity testing without written approval by EPA.

6. Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan

   Within 90 days of the permit effective date, the permittee shall prepare a copy of its Initial Investigation TRE Work Plan (1-2 pages). This plan shall include steps the permittee intends to follow if a Median Monthly Effluent result for chronic toxicity is reported as Fail (1) for the reporting month (see Part I, Table 2, Endnote 2), and should include the following, at minimum:

   a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

   b. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.

   c. If a TRE and Toxicity Identification Evaluation (TIE) are necessary, an indication of who would conduct these studies (i.e., an in-house expert or outside contractor).

7. Chronic Toxicity Median Monthly Effluent Result of **Fail (1)** Proceeding to TRE

   If the chronic toxicity Median Monthly Effluent result is reported as **Fail (1)** for the calendar month (see Part I, Table 2, Endnote 2), then—regardless of the minimum monitoring frequency in Part I, Table 2—the permittee shall conduct effluent monitoring using no more than three chronic toxicity tests **during the next consecutive calendar month where there is a discharge** and implement its Initial Investigation TRE Work Plan.

   If the chronic toxicity Median Monthly Effluent result **during this next consecutive calendar month** is **Pass (0)**, then the permittee shall return to the minimum monitoring frequency in Part I, Table 2. However, if this result is **Fail (1)**, then the permittee shall immediately initiate a TRE using—according to the type of treatment facility—EPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999), or EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989)—and return to the monitoring frequency in Part I, Table 2.

   In conjunction with TRE initiation, the permittee shall immediately develop and implement a Detailed TRE Work Plan which shall include the following: further actions undertaken by the permittee to investigate, identify, and correct the causes of toxicity; actions the permittee will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. This work plan shall be submitted to EPA upon request and maintained onsite.

   The permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using, as guidance, EPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003,

1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

During a TRE, the chronic toxicity effluent monitoring results conducted for the TRE/TIE that meet the WET method's Test Acceptability Criteria at the IWC shall be reported on the DMR following the Endnotes in Part I, Table 2.

8. Reporting of Toxicity Monitoring Results on DMR

   a. **Report no effluent monitoring result for Chronic Toxicity.** If no toxicity test monitoring for the calendar month is required and toxicity monitoring is not conducted, then the permittee shall report "NODI(9)" (i.e., Conditional Monitoring – Not Required for This Period) on the DMR form.

      Report Median Monthly Effluent result for Chronic Toxicity. See Part I, Table 2, Endnote 2.

      Report Maximum Daily Effluent result(s) for Chronic Toxicity. See Part I, Table 2, Endnote 3.

   b. The permittee shall submit the full toxicity laboratory report for all toxicity testing as an attachment to the DMR for the month in which the toxicity tests are initiated. The laboratory report shall contain: all toxicity test results (raw data and statistical analyses) for each effluent and related reference toxicant tested; chain-of custody; the dates of sample collection and initiation of each toxicity test; control performance; all results for other effluent parameters monitored concurrently with the effluent toxicity tests; and schedule and progress reports on TRE/TIE studies.

      Quality-control reporting for toxicity laboratory control group. To assist in reviewing within-test variability, the toxicity laboratory report must include, for each test species/WET method: quality-control charts for the mean, standard deviation and coefficient of variation of the control group. Each toxicity laboratory report attached to the DMR shall include both a graphical control chart (with a long-term average printed below the chart) and a table of control-group data for the WET method/test species. These data shall be listed in the table: sample date, type of dilution water, number of replicates (n), control mean (cM), control standard deviation (cS), and control coefficient of variation (cK). The quality-control chart and the table shall report data for the last 50 toxicity tests conducted by the laboratory. If there are more than 30 tests with a different number of replicates (e.g., 20 tests of n=10 and 30 tests of n=20), then use separate control charts and tables. The table shall also report the following summary statistics separately for cM, cS, and cK: number of observations,

average, standard deviation, and percentiles (minimum, 10th, 25th, 50th, 60th, 65th, 70th, 75th, 80th, 90th, and maximum). This information is required for review of toxicity test results and the toxicity laboratory's performance of the test species/WET method by the permittee and permitting authority. Also, see test species/WET method-specific percentiles for the mean, coefficient of variation, and standard deviation of control-group data in section 3 tables of the TST Technical Document.

c. **Notification reporting.** The permittee shall notify EPA in writing within 14 days of a Median Monthly Effluent result of Fail (1) for chronic toxicity. The permittee shall notify EPA in writing within 14 days of a Maximum Daily Effluent result of Fail (1) and ≥ 50 PE. The permittee shall notify the EPA in writing within 14 days of two consecutive Median Monthly Effluent results of Fail (1) for chronic toxicity. Such notification shall describe actions the permittee has taken (or will take) to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

9. Permit Reopener for Toxicity

In accordance with 40 CFR 122 and 124, this permit may be modified to include effluent limits or permit conditions to address toxicity (acute and/or chronic) in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to toxicity.

Part III. STANDARD CONDITIONS

The permittee shall comply with all EPA Region 9 Standard Conditions below.

A. All NPDES Permits

In accordance with 40 CFR § 122.41, the following conditions apply to all NPDES permits and are expressly incorporated into this permit.

1. Duty to comply; at 40 CFR § 122.41(a).

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under 405(d) of the CWA within the time provided in the regulations that established these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.[1]

c. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.[1]

2. Duty to reapply; at 40 CFR § 122.41(b).

[1] The civil and administrative penalty amounts are adjusted annually for inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, and the current penalty amounts are set forth in 40 CFR § 19.4.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. Any permittee with a currently effective permit shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director.

3. Need to halt or reduce activity not a defense; at 40 CFR § 122.41(c).

   It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to mitigate; at 40 CFR § 122.41(d).

   The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper operation and maintenance; at 40 CFR § 122.41(e).

   The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. Permit actions; at 40 CFR § 122.41(f).

   This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property rights; at 40 CFR § 122.41(g).

   This permit does not convey any property rights of any sort, or any exclusive privilege.

8. Duty to provide information; at 40 CFR § 122.41(h).

   The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

9. Inspection and entry; at 40 CFR § 122.41(i).

   The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

   a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

10. Monitoring and records; at 40 CFR § 122.41(j).

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR § 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample measurement, report or application. This period may be extended by request of the Director at any time.

   c. Records of monitoring information shall include:

      (1) The date, exact place, and time of sampling or measurements;

      (2) The individual(s) who performed the sampling or measurements;

      (3) The date(s) analyses were performed

      (4) The individuals(s) who performed the analyses;

      (5) The analytical techniques or methods used; and

(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 CFR § 136 or, in the case of sludge use or disposal, approved under 40 CFR § 136 unless otherwise specified in 40 CFR § 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory requirement; at 40 CFR § 122.41(k).

a. All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR § 122.22.) All permit applications shall be signed as follows:

(1) For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Note: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR § 122.22(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under 40 CFR § 122.22(a)(1)(ii) rather than to specific individuals.

(2) For a partnership or sole proprietorship. By a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

b. All reports required by permits, and other information requested by the Director shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (a) of this section;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters of the company, (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,

(3) The written authorization is submitted to the Director.

c. Changes to authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

e. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting requirements; at 40 CFR § 122.41(l).

a. Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alternations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, an such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

b. Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the CWA. (See 40 CFR § 122.61; in some cases, modification or revocation and reissuance is mandatory.)

(1) Transfers by modification. Except as provided in paragraph (b) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under 40 CFR § 122.62(b)(2)), or a minor modification made (under 40 CFR § 122.63(d)), to identify the new permittee and incorporate such other requirements as may be necessary under CWA.

(2) Automatic transfers. As an alternative to transfers under paragraph (a) of this section, any NPDES permit may be automatically transferred to a new permittee if:

(A) The current permittee notifies the Director at least 30 days in advance of the proposed transfer date in paragraph (b)(2) of this section;

(B) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

(C) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under 40 CFR § 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (b)(2) of this section.

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 CFR § 127.2(b), in compliance with this section and 40 CFR § 3 (including, in all cases, subpart D to part 3), 40 CFR § 122.22, and 40 CFR § 127.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR § 136 or, in the case of sludge use or disposal, approved under 40 CFR § 503, or as specified in the permit, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A report shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combine sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 CFR § 127.2(b), in compliance with this section and 40 CFR § 3 (including, in all cases, subpart D to part 3), 40 CFR § 122.22, and 40 CFR § 127.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(i) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR § 122.41(g).)

(ii) Any upset which exceeds any effluent limitation in the permit.

(iii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See 40 CFR § 122.44(g).)

(3) The Director may waive the written report on a case-by-case basis for reports under 40 CFR § 122.41(l)(6)(ii) of this section if the oral report has been received within 24 hours.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under 40 CFR § 122.41(l)(4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (l)(6) of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

13. Bypass; at 40 CFR § 122.41(m).

a. Definitions.

(1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 40 CFR § 122.41(m)(3) and (m)(4) of this section.

c. Notice.

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph (l)(6) of this section (24-hour notice).

(3) As of December 21, 2020 all notices submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 CFR § 127.2(b), in compliance with this section and 40 CFR § 3 (including, in all cases, subpart D to part 3), 40 CFR § 122.22, and 40 CFR § 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

d. Prohibition of bypass.

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(iii)The permittee submitted notices as required under paragraph (m)(3) of this section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (m)(4)(i) of this section.

14. Upset; at 40 CFR § 122.41(n).

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent cause by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (n)(3) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated; and

(3) The permittee submitted notice of the upset as required in paragraph (l)(6)(ii)(B) of this section (24 hour notice).

(4) The permittee complied with any remedial measures required under paragraph (d) of this section.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

15. Reopener Clause; at 40 CFR § 122.44(c).

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the CWA. The Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or controls a pollutant or practice not limited in the permit.

16. Minor modifications of permits; at 40 CFR § 122.63.

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of 40 CFR § 124. Any permit modification not processed as a minor modification under this section must be made for cause and with 40 CFR § 124 draft permit and public notice as required in 40 CFR § 122.62. Minor modifications may only:

a. Correct typographical errors;

b. Require more frequent monitoring or reporting by the permittee;

c. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or

d. Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.

e. Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge under 40 CFR § 122.29.

f. Delete a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

g. Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR § 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR § 403.18) as enforceable conditions of the POTW's permits.

17. Termination of permits; at 40 CFR § 122.64.

a. The following are causes for terminating a permit during its term, or for denying a permit renewal application:

(1) Noncompliance by the permittee with any conditions of the permit;

(2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(4) A change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or sludge use or disposal practice controlled by the permit (for example, plant closure or termination of discharge by connection to a POTW).

18. Availability of Reports; pursuant to CWA § 308

Except for data determined to be confidential under 40 CFR § 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Regional Administrator. As required by the CWA, permit applications, permits, and effluent data shall not be considered confidential.

19. Removed Substances; pursuant to CWA § 301

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials entering waters of the U.S.

20. Severability; pursuant to CWA § 512

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.

21. Civil and Criminal Liability; pursuant to CWA § 309

Except as provided in permit conditions on "Bypass" and "Upset", nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

22. Oil and Hazardous Substances Liability; pursuant to CWA § 311

    Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the CWA.

23. State, Tribe, or Territory Law; pursuant to CWA § 510

    Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State, Tribe, or Territory law or regulation under authorities preserved by CWA § 510.

Attachment A: Definitions

1. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

2. "Average weekly discharge limitation" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

3. "Best Management Practices" or "BMPs" are schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of the U.S. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may further be characterized as operational, source control, erosion and sediment control, and treatment BMPs.

4. A "composite" sample means a time-proportioned mixture of not less than eight discrete aliquots obtained at equal time intervals (e.g., 24-hour composite means a minimum of eight samples collected every three hours). The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling, but not less than 100 ml. Sample collection, preservation, and handling shall be performed as described in the most recent edition of 40 CFR § 136.3, Table II. Where collection, preservation, and handling procedures are not outlined in 40 CFR § 136.3, procedures outlined in the 18th edition of Standard Methods for the Examination of Water and Wastewater shall be used.

5. A "daily discharge" means the "discharge of a pollutant" measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For

pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

6. A "daily maximum allowable effluent limitation" means the highest allowable "daily discharge."

7. A "DMR" is a "Discharge Monitoring Report" that is an EPA uniform national form, including any subsequent additions, revisions, or modifications for reporting of self-monitoring results by the permittee.

8. A "grab" sample is a single sample collected at a particular time and place that represents the composition of the discharge only at that time and place. Sample collection, preservation, and handling shall be performed as described in the most recent edition of 40 CFR § 136.3, Table II. Where collection, preservation, and handling procedures are not outlined in 40 CFR § 136.3, procedures outlined in the 18th edition of Standard Methods for the Examination of Water and Wastewater shall be used.

9. The "method detection limit" or "MDL" is the minimum concentration of an analyte that can be detected with 99% confidence that the analyte concentration is distinguishable from the method blank results, as defined by a specific laboratory method in 40 CFR § 136. The procedure for determination of a laboratory MDL is in 40 CFR § 136, Appendix B.

10. The "minimum level" or "ML" is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure, assuming that all the method-specific sample weights, volumes, and processing steps have been followed (as defined in EPA's draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994). If a published method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the published method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc. (When neither an ML nor MDL are available under 40 CFR § 136, an interim ML should be calculated by multiplying the best estimate of detection by a factor of 3.18; when a range of detection is given, the lower end value of the range of detection should be used to calculate the ML.) At this point in the calculation, a different procedure is used for metals, than non-metals:

    a. For metals, due to laboratory calibration practices, calculated MLs may be rounded to the nearest whole number.

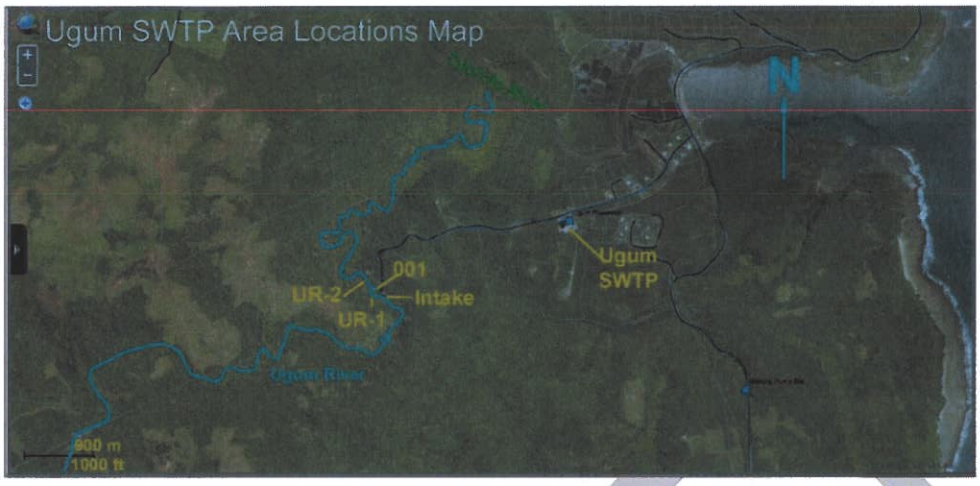
    b. For non-metals, because analytical instruments are generally calibrated using the ML as the lowest calibration standard, the calculated ML is then rounded to the nearest multiple of (1, 2, or 5) x 10n, where n is zero or an integer. (For example, if an MDL is 2.5 µg/l, then the calculated ML is: 2.5 µg/l x 3.18 = 7.95 µg/l. The multiple of (1, 2, or 5) x 10n

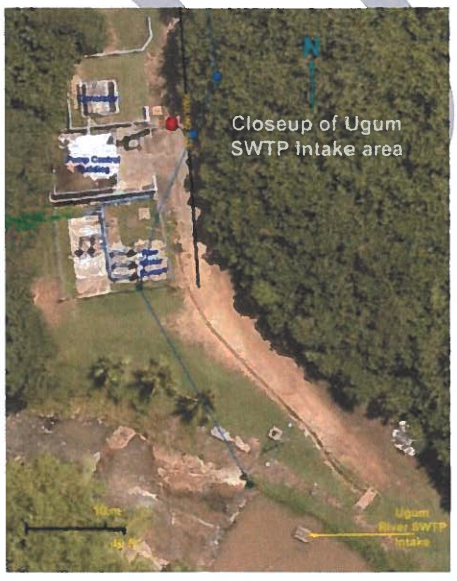
nearest to 7.95 is 1 x 101 = 10 µg/l, so the calculated ML, rounded to the nearest whole number, is 10 µg/l.)

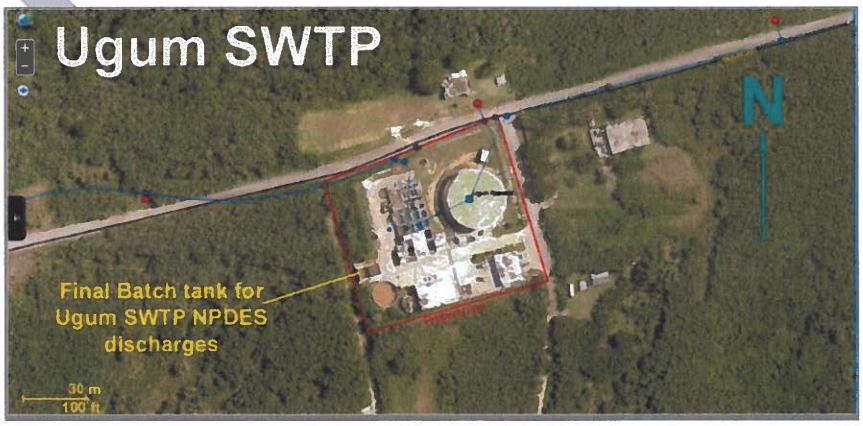
11. A "NODI(B)" means that the concentration of the pollutant in a sample is not detected. NODI(B) is reported when a sample result is less than the laboratory's MDL.

12. A "NODI(Q)" means that the concentration of the pollutant in a sample is detected but not quantified. NODI(Q) is reported when a sample result is greater than or equal to the laboratory's MDL, but less than the ML.

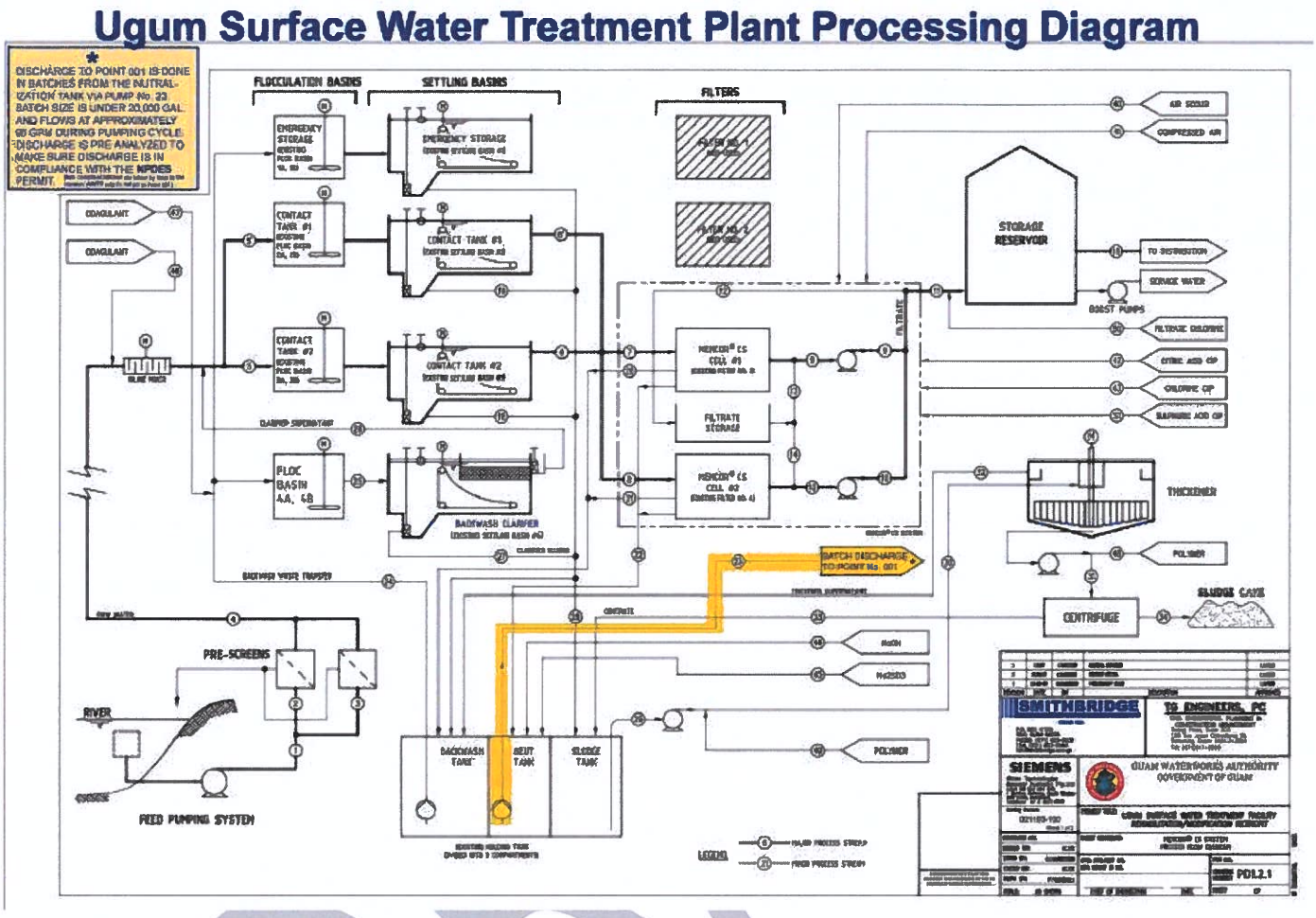
Attachment B: Location Maps







Attachment C: Wastewater Flow Schematic



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET
June 2021

Permittee Name: Guam Waterworks Authority

Mailing Address: Gloria B. Nelson Public Service Building
688 Route 15, Suite 200
Mangilao, Guam 96913

Facility Location: 308 Paulino Heights Drive
Talofofo, Guam 96932

Contact Person(s): Paul Kemp, Assistant General Manager
(671) 300 – 6885

NPDES Permit No.: GU0020371

I. STATUS OF PERMIT

Guam Waterworks Authority (the "permittee" or "GWA") applied for the renewal of its National Pollutant Discharge Elimination System ("NPDES") permit to authorize the discharge of treated effluent (i.e. clean-in place and backwash wastewater) from the Ugum Surface Water Treatment Plant (the "facility" or "SWTF") to the Ugum River located in Guam. A complete application was submitted on February 8, 2021. EPA Region 9 developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act (CWA), which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit GU0020371 issued on July 8, 2016. Pursuant to 40 CFR § 122.6, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee is classified as a minor discharger. EPA rated the facility with 60 points, and 80 points are needed for the facility to be a major discharger.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2016 – 2021)	Re-issued permit (2021 – 2026)	Reason for change
Metals monitoring	NA	Monitoring for copper, arsenic, cadmium, chromium III, chromium VI, lead, mercury, nickel, selenium, silver, and zinc in 1st, 3rd, 5th year.	Source water often contains metals, which can become concentrated in residuals associated with the treatment process. Monitoring is needed to confirm metal concentrations that may be present in the discharge.

Permit Condition	Previous Permit (2016 – 2021)	Re-issued permit (2016 – 2021)	Reason for change
Chronic toxicity monitoring	NA	Monitoring in the 1st, 3rd, 5th year of the permit for *Ceriodaphnia dubia*, *Pimphales promelas*, and *selenastrum capricornutum*	
Receiving water hardness monitoring	NA	Once per quarter at monitoring location UR-1 or UR-2 in the receiving water.	Some water quality standards for metals are hardness dependent (as hardness increases, the toxicity of certain metals decreases).
Ammonia monitoring	Annual monitoring	Removed monitoring requirement	The permittee has monitored for ammonia for the last two permit terms and the concentrations are consistently low. Therefore, EPA is removing the monitoring requirement.
BOD_5	Annual monitoring	Removed monitoring requirement	Based on the characteristics of filter backwash water, DO-demanding substances are not expected to be present in the discharge. The permittee has monitored BOD for the last two permit terms and levels are low (i.e. 2.29 mg/L for the).

III. GENERAL DESCRIPTION OF FACILITY

The Ugum SWTF is the only drinking water treatment plant owned and operated by GWA. The facility is the major source of water supply for the Southern Public Water System, which serves the southern part of the island. Ugum SWTF is designed to produce up to 4 mgd of potable water per day (in the rainy season), and discharges on average 0.02 mgd back to the river over approximately 3 and half hours. (GWA 2014).

During 2007 to 2011, GWA upgraded the facility from a conventional filtration to a microfiltration system, as part of the GWA Stipulated Order for Preliminary Relief. The facility has operated solely on microfiltration since March 28, 2011. In the facility's previous design, the plant did not discharge wastewater.

The facility includes an intake structure in the river, a pumping station next to the riverbank at the intake structure, transmission lines, and a treatment plant. Raw water is pumped from Ugum River to a wetwell via pre-screens. The screens are back-flushed periodically to remove solids accumulated on the screen and discharged into the Ugum River.

After screening, the raw water flows into flocculation tanks and then fed into contact tanks. Supernatant from the contact tanks is sent to membrane filters (Memcor CS System) for fine solids removal. Permeate is disinfected with chlorine prior to entering the distribution systems.[1]

The membrane filters (Memcor System) require regular cleaning (i.e. membrane backwash cycle). The dirty backwash water is transferred to a recycle tank and clarifier to stabilize pH and neutralize the chlorine prior to discharging. The design capacity of the tank is 25,000 gallons (0.025 mgd). The facility may discharge multiple times a day if the filters are cleaned more than once per day, which occurs only after a high intensity rainfall event after a prolonged dry period.

Solids are collected from the contact tanks and backwash water clarifiers. Solids are then sent to the sludge tank and are pumped into the sludge handling system. When the sludge handling system in not in operation, dewatered solids are hauled to Inarajan Wastewater Treatment Plant in Inarajan, Guam. See Attachment B, process flow diagram for Ugum SWTP.

IV. DESCRIPTION OF RECEIVING WATER

The Guam Environmental Protection Agency ("GEPA") adopted water quality standards ("WQS") for different surface waterbodies, depending on the level of protection required. The WQS, revised in 2015, provides water quality criteria by surface waterbody classification. The Ugum River is located within the area classified as Category S-2, medium quality surface water(s). Category S-2 waters are used for recreational purposes, including whole body contact recreation, for use as potable water supply after adequate treatment is provided, and propagation and preservation of aquatic wildlife and aesthetic enjoyment.

The facility discharges to the Ugum River at latitude 13° 19'74" N and 144° 44' 57" E through outfall 001, before the convergence with the Talofofo River, which flows into Talofofo Bay. The Ugum water is approximately 7.33 square miles of hills with steep slopes. Per the permit application, the critical low flow of the River is 2.00 cfs and has a total hardness of 58 mg/L of CaCO3. The Ugum River also is impaired due to turbidity, and in 2007, EPA approved a total maximum daily load ("TMDL") for sediment.[2] The TMDL describes the turbidity of the Ugum River, which averages 12 NTU for the year, 21 NTU during the wet season, with a maximum of 240 NTU from 2002 to 2004. The Ugum River turbidity is about twice as high during the wet season than during the dry season. See section VI.B.1, Applicable Standards, Designated Uses, and Impairments of Receiving Water.

V. DESCRIPTION OF DISCHARGE

The discharge consists of clean-in-place washwater or maintenance washwater used to clean the filters. A maintenance wash occurs every 3 days and clean-in-place occurs every 2 weeks during normal operations. The frequency of the maintenance wash is designed to be a short version of the clean-in-place cycle. The water cleaning the filters contains sodium hypochlorite, citric acid, and sulfuric acid. The neutralization tanks use sodium hydroxide and sodium bisulfate

[1] Chlorine is used in both the membrane system for clean-in-place/maintenance wash and the disinfection system before water enters the distribution system. During the dry season, pre-chlorination at the headworks also can occur.
[2] The Ugum River was delisted from Guam's 303(d) list of impaired waters because EPA approved a sediment TMDL in 2007.

to balance the pH and sodium meta-bisulphate to neutralize chlorine prior to discharge. The neutralized chlorine and acid wastes generated by the chemical cleaning process is discharged into the Ugum River downstream of the intake structure. Characteristics of backwash residuals include precipitated solids, total organic carbon, total suspended solids, pH, and chlorine, when used. See section III. General description of this facility, above, for further information.

Discharge is "batch" analyzed. If the washwater does not meet effluent limits and can't be discharged, the washwater is pumped out by pumper trucks and transported by tanker truck to Inarajan Wastewater Treatment Plant in Inarajan, Guam.

Table 1 shows data related to discharge from Outfall 001 based on permittee's NPDES renewal application as well as data reported on discharge monitoring reports (i.e. from February 2016 to February 2021). Per the permit application, the facility discharges approximately 4 times per year. During the last permit term, the facility discharged 3 of the 5 years – 4 times in 2018, twice in 2019, and 12 times in 2020.[3] More information is available on Enforcement and Compliance History Online (ECHO) at https://echo.epa.gov/detailed-facility-report?fid=110041921356. Pollutants believed to be absent or never detected in the effluent are not included in the table below.

Table 1. Effluent Data for Outfall 001 from February 2016 to April 2021.

Parameter	Units(1)	Current Permit Effluent Limitations		Effluent Data		
		Average Monthly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Flow Rate	MGD	Monitoring Only	Monitoring Only	0.01	0.02	18
5-day BOD_5	mg/L	--	Monitoring Only	--	2.29	3
Ammonia (as N)	mg/L	--	Monitoring Only	--	0.532	3
pH	Standard Units	6.5 – 9.0 (min-max)		6.5 – 8.7		23
Turbidity	NTU	--	12.5(2)	--	11.7(2)	23
Total suspended solids	mg/L lbs/day	30.00 6.26	45.00 9.39	31 3.82	40 5.37	23 23
Total dissolved solids	mg/L lbs/day	1,000 208.63	1,000 208.63	403.8 42.6	596 66.6	23 23
Chlorine, total residual (TRC)	µg/L	0.05	0.05	<0.05	<0.05	14
Total aluminum	mg/L lbs/day	--	1.00 0.21	--	0.996 0.746	19

(1) Mass based limits calculated using 0.025 MGD flow. In times of extreme wet weather/emergency, mass based effluent limits shall not exceed 18.78 lbs/day for TSS and 417.25 lbs/day for TDS based of a 0.05 MGD flow.
(2) Turbidity effluent limits were expressed as an instantaneous maximum.
(3) When monitoring for total ammonia (as nitrogen), pH monitoring must be concurrent.

[3] The facility discharged twice on 2/28/2018, 5/31/2018, 11/30/2019, 1/31/2020, 2/29/2020, 4/30/2020, 6/30/2020, 7/31/2020, and 10/31/2020.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (i.e., "technology-based effluent limits") and the water quality standards applicable to the receiving water (i.e., "water quality-based effluent limits"). EPA has established the most stringent of applicable technology-based or water quality-based standards in the draft permit, as described below.

A. Applicable Technology-Based Effluent Limitations

There are no applicable national or Guam criteria for drinking water treatment plants residual management. There are, however, NPDES general permits for the water treatment industry in other states that contain technology-based effluent limits (TBELs) based on best professional judgement. The most common pollutants regulated in drinking water treatment permits include aluminum, iron, manganese, pH, settleable solids, total residual chlorine, and total suspended solids (EPA 2011).[4]

The previous permit compared such TBELs for drinking water treatment plants in 10 states (Mississippi, South Carolina, South Dakota, Washington, Alabama, Arkansas, Massachusetts and New Hampshire, Ohio, and Oklahoma). The tables below provide updated information from these permits. Note that total residual chlorine limits shown below are WQBELs and shown here only for comparison purposes.

Table 2. Maximum Daily Limits from State General Permit Examples[5]

State	Settleable Solids (mL/L)	TRC (mg/L)	Aluminum (mg/L)	TDS (mg/L)	TSS (mg/L)
Alabama (2018)	--	0.019	--	--	45
Arkansas (2016)	--	0.011 instant max	2	--	30

[4] In the *Drinking Water Treatment Plant Residuals Management Report* (2011), EPA found that individual permits most commonly included effluent limits for aluminum, iron, manganese, pH, settleable solids, total residual chlorine (TRC), and total suspended solids (TSS) in general permits and aluminum, copper, dissolved oxygen, iron, lead, pH, temperature, TRC, TSS, and turbidity in individual permits. Other pollutants that may be included in WTP permits based on source water characteristics or treatment chemicals used include ammonia, arsenic, biochemical oxygen demand (BOD), cadmium, manganese, oil and grease, settleable solids, total phosphorus, and zinc.

[5] See the following links for state general permits authorizing discharges from water treatment plants:
AL: http://www.adem.alabama.gov/programs/water/permits/ALG640000WaterTreat.pdf
AR: https://www.adeq.state.ar.us/water/permits/npdes/nonstormwater/pdfs/arg640000/current_permit.pdf
MA/NH: https://www.epa.gov/npdes-permits/potable-water-treatment-facility-general-permit-pwtf-gp-massachusetts-new-hampshire;
OH: https://www.epa.ohio.gov/dsw/permits/GP_WaterTreatmentPlants;
OK: https://www.deq.ok.gov/wp-content/uploads/water-division/2012-OKG38-Permit-1.pdf;
SD: https://denr.sd.gov/des/sw/IPermits/WTPPermit.pdf;
WA: https://ecology.wa.gov/DOE/files/ab/ab5bbdaa-0ae9-44a0-9fa7-44405c846b77.pdf
EPA R8: https://www.epa.gov/sites/production/files/2019-08/documents/npdes-dwgp-fact-sheet-2019.pdf
CA: https://www.waterboards.ca.gov/rwqcb2/water_issues/programs/npdes/FilterBackwash/R2_2016_0009.pdf
ID: https://www.epa.gov/sites/production/files/2017-12/documents/r10-npdes-idaho-drinking-water-facilities-gp-idg380000-final-permit-2016.pdf

State	Settleable Solids (mL/L)	TRC (mg/L)	Aluminum (mg/L)	TDS (mg/L)	TSS (mg/L)
Massachusetts and New Hampshire, EPA R1 (2017)	--	0.019	--	--	50
Ohio (2017)	--	0.019	--	--	45
Oklahoma (2020)	--		2	--	30
South Dakota (2016)	--	0.019 instant max	--	1,000	30 or 90 instant max based on RW water
Washington (2014)	0.2	0.15	--	--	--
EPA R8 (2019)	--	0.019		--	--
California (2016)	0.2	0 instant max	--	--	45 average weekly
Idaho (2016)	--	0.02	--	--	45

Table 3. Average Monthly Limits from State General Permit Examples[5]

State	Settleable Solids (mg/L)	TRC (mg/L)	Aluminum (mg/L)	TDS (mg/L)	TSS (mg/L)
Alabama	--	0.011 instant max		--	30
Arkansas	--	0.011 instant max	1.0 dissolved	--	20
Massachusetts and New Hampshire	--	0.011	--	--	30
Ohio	--	0.019	--	--	30
Oklahoma	--	--	1.0 dissolved	--	20
Washington	0.1	0.07	--	--	--
EPA R8 GP		0.011	87		30
California	0.1				
Idaho		0.1			30

Based on BPJ, EPA is retaining the TBELs developed for total suspended solids (TSS), and total dissolved solids (TDS) contained in the 2010 permit. Mass limits were calculated based on flow scenarios. The design capacity of the tank is 0.025 mgd. Under normal operations, the facility discharges on average 0.02 mgd and only needs to empty the tank once. However, the facility may discharge multiple times a day depending on receiving water conditions. After a prolonged dry period, an intense rain can increase the turbidity of the receiving water. The facility usually shuts down under such conditions. However, the filters may need to be cleaned twice prior to resuming operations.

Below shows example of calculations for TSS and TDS.

TSS: mass-based limits calculated from concentration-based limits
0.025 mgd flow; normal operation
30-day average – (30 mg/L)(0.025)(8.345) = 6.259 lbs/day
Daily max – (45 mg/L)(0.025)(8.345) = 9.388 lbs/day

0.05 mdg; emergency operation
Daily max – (45 mg/L)(0.050)(8.345) = 18.776 lbs/day

TDS: mass-based limits calculated from concentration-based limits
0.025 mgd flow; normal operation
30-day average – (1,000 mg/L)(0.025)(8.345) = 208.625 lbs/day
Daily max – (1,000 mg/L)(0.025)(8.345) = 208.625 lbs/day

0.05 mdg; emergency operation
Daily max – (1,000 mg/L)(0.050)(8.345) = 417.250 lbs/day

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR § 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers' Manual* (Office of Water, U.S. EPA, September 2010). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential Analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

Guam WQS establish water quality criteria for the following beneficial uses in Ugum River, a category S-2 water: recreation, including whole body contact recreation, for use as potable water supply after adequate treatment is provided, and propagation and preservation of aquatic wildlife and aesthetic enjoyment.

Applicable water quality standards establish water quality criteria for the protection of aquatic wildlife from acute and chronic exposure to certain metals that are hardness dependent, with a "cap" of 400 mg/l and a standard default value of 100 mg/L.

The Ugum River has a sediment TMDL. The TMDL was completed prior to the facility's discharge and therefore, does not include a waste load allocation for the facility.[6] EPA is retaining the turbidity and total suspended solids effluent limits as well as the receiving water monitoring requirements for these pollutants.

2. Dilution in the Receiving Water

Discharges from Outfall 001 are to the Ugum River, and the permittee has not requested a mixing zone. Dilution is not allowed and therefore, not considered by EPA in the development of water quality-based effluent limits applicable to the discharge. All effluent limits apply at the outfall.

3. Type of Industry

Typical pollutants of concern for drinking water treatment plant discharges include chlorine and the byproducts of chlorine, which at elevated levels are toxic to aquatic life. Other pollutants are concern include metals used in the treatment process to clean filters, such as iron and aluminum. See section VI.A. Applicable Technology-Based Effluent Limitations above. The permit retains effluent limits for chlorine and aluminum. The permit includes a daily maximum effluent limit for aluminum as opposed to an average monthly effluent limit because the discharge is intermittent.

4. History of Compliance Problems and Toxic Impacts

In recent years, GWA has faced an increasingly difficult task of keeping the plant operating at full capacity when the river is running with high turbidity rates. This highly turbid water has increased operational costs and operation and maintenance practices that can be hard on the treatment system, leading to premature failure of some components of the treatment plant system. Per the permittee's data from February 2016 to April 2021, no pollutants exceeded the permits effluent limits.

5. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* herein after referred to as EPA's TSD (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated assuming a coefficient of variation of 0.6 and

[6] The sediment TMDL allocated 19 tons/day (for cut/rill erosion, roads, stream bank erosion) as a daily load allocation for the Ugum River.

the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of EPA's TSD).

EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

Projected maximum concentration = C_e × *reasonable potential multiplier factor.*

Where, "C_e" is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

Summary of Reasonable Potential Statistical Analysis:

Parameter(1)	Maximum Observed Concentration	*n*	RP Multiplier(2)	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Ammonia(3)	0.532	>20	1.4	0.75	2.2 mg/L(3)	No
Total Residual Chlorine	0	> 20	1.4	0	0.011 mg/L	No
Aluminum	33.0 mg/L	> 20	1.4	46.2	1.0 mg/L	Yes

(1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected are included in this analysis.

(2) RP multiplier is based on 95 % probability using (n) and the coefficient of variation (CV). Because of data variability, EPA used a CV of 0.6 for all parameters.

(3) GEPA standards for ammonia are pH based using the following formula, for acute criteria, CMC = $0.411/(1+10^{(7.204-pH)}) + 58.4/(1+10^{(pH-7.204)})$. EPA calculated ammonia criteria using the lowest and maximum pH values of the effluent (i.e. 6.5 and 8.7) to be 48.83 mg/L and 2.20 mg/L, respectively. EPA chose the most conservative value, 2.2 mg/L.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated, and the permit may be re-opened to incorporate effluent limitations as necessary.

- ***Flow (monitoring):*** No limits are established for flow, but flow rates must be monitored and reported. Weekly monitoring is retained in the permit. The permittee indicated that the design flow rate for the facility is 0.02 and the maximum flow rate is 0.02 mgd on the permit application. For purposes of this reissuance, EPA is using the design capacity of the tanks, 0.025 mgd for the daily maximum mass loadings and 0.50 mgd for emergency situations where the facility needs to discharge more in a given month since the discharge is batched discharged and can occur more than once per day.

- ***pH*:** Drinking water treatment plants adjust the pH to optimize source water treatment. Based on effluent monitoring data, pH values ranged from 6.5 to 8.7 S.U. However, EPA is retaining the WQBEL pH effluent limit based on antibacksliding requirements.

- ***Turbidity:*** EPA is retaining the turbidity limits in the permit based on BPJ, consistent with anti-backsliding provisions. The limit also implements the numeric target set forth in the Ugum Watershed TMDL. Receiving water monitoring for turbidity is also retained.

- ***Total Suspended Solids:*** EPA is retaining the TSS effluent limits of 30 mg/L for average monthly and 45 mg/L for max daily. EPA is retaining these TBELs to meet the requirements of BCT/BAT.[7] EPA determined that drinking water treatment facilities, like this one, have similar pollutants in their discharge and employ similar wastewater treatment processes to small POTWs. Therefore, the secondary treatment standards are a starting point for establishing TSS limits. The secondary treatment standards, at 40 C.F.R. § 133.105(b), establish both 30- day average effluent limitation for TSS (30 mg/L) and a 7-day average effluent limitation for TSS (45 mg/L). A daily maximum was used instead of a 7-day average because the discharge is batched discharge, occurring for approximately 3 hours. Retaining the TSS limit will also ensure the WQS requirement that concentrations of TSS in the receiving water "should not exceed 20 mg/L, except when due to natural conditions" for S-2 waters as well as the sediment TMDL. Receiving water monitoring for TSS is also retained.

- ***Total Dissolved Solids:*** EPA is retaining the effluent limits for TDS of 1,000 mg/L and 208.63 lbs/day, EPA is retaining these TBELs to meet the requirements of BCT/BAT.[7] Retaining TDS will be used to ensure that the effluent will not cause the ambient water to exceed 500 mg/L or 122% of the ambient conditions for S-2 waters.

- ***Total Residual Chlorine:*** EPA is retaining the TRC effluent limits of 0.5 ug/L as a daily max and average monthly limit. EPA is retaining these TBELs to meet the requirements of BCT/BAT.[7] EPA determined that drinking water treatment facilities, like this one, have similar pollutants in their discharge and employ similar wastewater treatment processes to small POTWs.

- ***Total Aluminum:*** Aluminum chlorohydrate is used as a coagulant, as part of the treatment process (i.e. filter backwash from cleaning). EPA is retaining the WQBEL effluent limits for aluminum because there is reasonable potential for the discharge to exceed the WQS. Per GEPA's WQS, the fresh water maximum numerical limit for Aluminum is 1.0 mg/L. Mass-based effluent limits were calculated using a flow of 0.025

[7] BCT represents the control from existing industrial point sources of conventional pollutants, including biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease. BCT standards are established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests. BAT represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

mgd. The permit includes a daily maximum effluent limit for aluminum as opposed to an average monthly effluent limit because the discharge is intermittent.

- ***Metals (monitoring):*** EPA is establishing metal monitoring in year 1, 3, and 5 of the permit. Water treatment plants remove metals from the source water to meet maximum contaminant levels (MCLs) in the finished drinking water. The removed metals and metal constituents of treatment chemicals become part of the residual waste streams. EPA is establishing monitoring requirements for copper, arsenic, cadmium, chromium III, chromium VI, lead, mercury, nickel, selenium, silver, and zinc, as these metals can be present in source water and become concentrated during the treatment process or can be present in coagulants.[8] These parameters must be measured and reported as total recoverable.

- ***Hardness (monitoring):*** EPA is establishing a hardness monitoring requirement because hardness is required for the calculation of metals toxicity. This information will be used to determine the need for metal effluent limits during the next reissuance.

- ***Chronic toxicity (monitoring):*** EPA is establishing chronic toxicity monitoring in year 1, 3, and 5 of the permit. GEPA has narrative criteria in their water quality standards that prohibit toxic discharges in toxic amounts. While potable water treatment facilities are generally considered low risk for toxicity, EPA needs to gather sufficient data to ensure that discharges do not demonstrate reasonable potential to cause or contribute pollutants in concentrations that are toxic to aquatic life. Chronic toxicity is conducted to determine whether certain effluents, which may contain potentially toxic pollutants, are discharged in a combination which produces a toxic effect in the receiving water. The principal advantages of biological techniques, like WET testing, are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed.

  EPA notes that priority pollutants are not expected to be present in the discharge. Therefore, a priority pollutant scan is not required. Instead the draft permit contains monitoring requirements for metals and toxicity.

D. Anti-Backsliding

Section 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulation. The permit does not establish any effluent limits less stringent than those in the previous permit and does not allow backsliding.

[8] Chromium, copper, nickel, and zinc can be present in an aluminum-based coagulant as a treatment chemical impurity.

E. Antidegradation Policy

EPA's antidegradation policy under CWA § 303(d)(4) and 40 CFR § 131.12 and Section 5101.B of Guam EPA's water quality standards require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit contains effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone; therefore these limits will apply at the end of pipe without consideration of dilution in the receiving water. Due to the low levels of toxic pollutants present in the effluent, high level of treatment being obtained, and water quality-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

Section 5103 of Guam EPA's water quality standards contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established. The permittee is required to monitor for flow, metals, and chronic toxicity.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the draft permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the draft permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the draft permit. All DMRs are to be submitted electronically to EPA using NetDMR.

Grab samples are required for all parameters because of the batch discharges. (40 CFR 136). Discrete samples are appropriate when a sample is needed to monitor a non-continuous discharge and allow collection of a variable sample volume. Continuous metered monitoring of flow rate is retained in the permit.

C. Whole Effluent Toxicity (WET) Requirements

Aquatic life is a public resource protected in surface waters covered by the CWA. As evidence that CWA requirements protecting aquatic life from chronic and acute toxicity are met

in surface waters receiving the NPDES discharge, samples are collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods. These aquatic toxicity test results are used to determine if the NPDES effluent causes toxicity to aquatic organisms. Toxicity testing is important because for scores of individual chemicals and compounds, chemical-specific environmentally protective levels for toxicity to aquatic life have not been developed, or set as water quality standards. In due course, some such chemicals and compounds can eventually make their way into effluents and their receiving surface waters. When this happens, toxicity tests of effluents can demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling a water quality problem for aquatic life.

EPA's WET methods are systematically-designed instructions for laboratory experiments that expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to both an NPDES effluent sample and a negative control sample. During the toxicity test, each exposed test organism can show a difference in biological response; some will be undesirable differences. Examples of undesirable biological responses include, but are not limited to, eggs not fertilized, early life stages that grow too slowly or abnormally, or death. At the end of a toxicity test, the different biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., means, standard deviations, coefficients of variation). The effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) chosen by the permitting authority and specified in the NPDES permit. The chosen statistical approach is compatible with both the experimental design of the WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic, in relation to the permit's toxicity level for the effluent, which is set to protect the quality of surface waters receiving the NPDES discharge. EPA's WET methods are specified under 40 CFR § 136 and/or in applicable water quality standards.

EPA recommends inferential statistical approaches that a permitting authority chooses from to set a protective level for toxicity in an NPDES discharge. The statistical approach chosen for this permit is based on bioequivalence hypothesis testing and is called the Test of Significant Toxicity (TST) statistical approach. It is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-004, 2010; TST Technical Document) and Denton DL, Diamond J, and Zheng L. 2011. Test of significant toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. *Environ Toxicol Chem* 30:1117-1126. This statistical approach supports important choices made within a toxicity laboratory which favor quality data and EPA's intended levels for statistical power when true toxicity is statistically determined to be unacceptably high (≥ 25 PE, Percent (%) Effect), or acceptably low (< 10 PE). Example choices are practices supporting healthy test organisms, increasing the minimum recommended replication component of the WET method's experimental design (if needed), technician training, etc. TST results do not often differ from other EPA-recommended statistical approaches using hypothesis testing (Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. *Environ Toxicol Chem* 32:1101-1108.). The TST maintains EPA's desired low false positive rate for WET methods—the probability of declaring toxicity when true toxicity is acceptably low ≤ 5%—when quality toxicity laboratories conduct toxicity tests (TST Technical Document; Fox JF, Denton DL, Diamond J, and Stuber R.

2019. Comparison of false-positive rates of 2 hypothesis-test approaches in relation to laboratory toxicity test performance. *Environ Toxicol Chem* 38:511-523.). Note: The false positive rate is a long-run property for the toxicity laboratory conducting a WET method. A low false positive rate is indicted by a low long-run toxicity laboratory control coefficent of variation for the test species/WET method, using a minimum of 30 to 50 toxicity tests.

In accordance with 40 CFR § 122.44(d)(1), reasonable potential for chronic toxicity has not been established. This is because no chronic toxicity test result is Fail (1) indicating unacceptable toxicity is not present in the effluent and/or no associated PE (Percent (%) Effect) value is ≥ 10 indicating toxicity at a level higher than acceptable is not present in the effluent. Thus, no chronic toxicity WQBELs are required for the permitted discharge (40 CFR § 122.44(d)(1)). However, monitoring and reporting for both the median monthly and maximum daily effluent results for the parameter of chronic toxicity are required, so that effluent toxicity can be assessed in relation to CWA requirements for the permitted discharge (see Part I, Table 2 in NPDES permit).

In accordance with 40 CFR § 122.44(d)(1)(ii), in setting the permit's levels for chronic toxicity and conditions for discharge, EPA is using a test species/chronic short-term WET method and a discharge Instream Waste Concentration (IWC) representing conservative assumptions for effluent dilution necessary to protect receiving water quality. The IWC is a discharge-specific term based on the permit's authorized mixing zone or initial dilution. Generally, the dilution model result "S" from Visual Plumes/Cormix is used. S is the volumetric dilution factor, i.e. 1 volume effluent is diluted with S − 1 volumes surface water) = [(Ve + Va) / Ve]. Following the mass balance equation, if the dilution ratio D = Qs / Qe, then [(Qe + Qs) / Qe] = 1 + D = S.

For this discharge, S = 1 (i.e., no authorized dilution). The discharge-specific IWC = 1 to 1 dilution (1:1, 1/1) = 100% effluent. The IWC made by the toxicity laboratory is mixed as 1 part solute (i.e., effluent) to 0 parts dilutant (1: (1 – 1)) for a total of 1 part.

The TST's null hypothesis for chronic toxicity (H_o) is: In-stream Waste Concentration (IWC) mean response (% effluent) ≤ 0.75 Control mean response. The TST's alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. For this permit, results obtained from a single chronic toxicity test are analyzed using the TST statistical approach, where the required chronic toxicity IWC for Discharge Point Number 001 is 100% effluent.

For NPDES samples for toxicity testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends at the first time of sample use (initiation of toxicity test). 40 CFR § 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA. In a June 29, 2015 inter-office memorandum, EPA Region 9 authorized a hold time variance of up to 72-hours applicable only to Pacific Island Territory permittees which ship the NPDES sample to the continental U.S. for toxicity testing, with conditions (see NPDES permit).

Species sensitivity screening for chronic toxicity is not an automatic requirement in this permit. However, the permit retains a species sensitivity screening condition as an option for the

permitting authority to exercise, particularly when the quality of the permitted discharge has changed, or is expected to change, during the permit term.

IX. SPECIAL CONDITIONS - RECEIVING WATER MONITORING

The Ugum River is an impaired water body with a TMDL for sediment. The permittee shall not contribute to the sediment loading in the river. Accordingly, monthly receiving water monitoring is required for turbidity and total suspended solids. The permittee shall take samples both upstream and downstream of the outfall during a discharge. The downstream sample shall be collected at least 200 feet downstream of the outfall to ensure proper effluent mixing with the receiving water. Hardness monitoring is also required.

Additional parameter monitoring is required in order to determine compliance with narrative Guam WQS. The narrative portion of the Guam WQS describes limits while allowing flexibility to account for ambient concentrations. Downstream samples shall be used as a compliance point, while upstream samples shall be used as reference for ambient concentrations. Hence, the downstream compliance sample must be higher than the upstream background sample in order to constitute a violation of a narrative standard or permit condition. EPA acknowledges statistical variations due to randomness in comparing downstream to upstream receiving water samples and will exercise enforcement discretion accordingly. The summary tables below shows the receiving water monitoring and a statistical analysis for the data during the last permit term.

Table 4. Receiving water monitoring data for TSS and turbidity in the Ugum River.

Date	TSS (mg/L)[1]		Turbidity (NTU)[2]	
	UR-1 (Upstream)	UR-2 (Downstream)	UR-1 (Upstream)	UR-2 (Downstream)
10/16/2015	17	16	--[3]	--[3]
1/19/2016	2.4	4.8	--[3]	--[3]
2/5/2016	3.6	5.2	--[3]	--[3]
3/16/2016	--[3]	--[3]	2.4	1.9
4/5/2016	1.2	1.2	--	--
5/12/2016	6.0	4.0	2.1	1.7
6/13/2016	5.2	3.2	1.8	2.0
8/5/2016	2.8	3.6	--[3]	--[3]
10/6/2016	18.4	19.2	--[3]	--[3]
11/23/2016	6.8	8.0	20.9	21.9
12/29/2016	2.6	3.2	12.9	10.6
2/3/2017	137	155	306	366
3/15/2017	4.0	3.6	3.27	3.90
4/5/2017	3.6	2.0	5.88	5.49
5/18/2017	1.6	0.8	3.97	4.78
6/14/2017	0.0	0.0	3.5	3.0
11/16/2017	1.4	1.2	5.20	5.47
2/14/2018	1.2	6.6	2.48	4.83
5/16/2018	0.4	1.2	5.49	5.78
11/26/2019	4.8	2.0	7.1	7.3
1/14/2020	6.0	6.8	3.74	3.40
2/10/2020	--[3]	2.0	3.59	4.77

Date	TSS (mg/L)		Turbidity (NTU)	
	UR-1 (Upstream)	UR-2 (Downstream)	UR-1 (Upstream)	UR-2 (Downstream)
4/28/2020	1.6	2.8	1.3	2.8
4/30/2020	1.6	0.8	1.2	2
6/2/2020	7.6	2.8	3.0	14.6
7/28/2020	5.7	6.7	18.4	18.1
10/14/2020	6.8	7.6	13.6	14.4

[1]A paired two sample mean t-test for TSS resulted in no statistical significance difference upstream and downstream of the outfall (i.e. two-tailed p value of 0.84 compared to a alpha value of 0.5). The data on 2/3/2017 was excluded from the statistical analysis as sample data is not representative of typical stream conditions (i.e. stream greater than 7 times more turbid) and could be due to variations due to randomness of sampling.
[2]A paired two sample mean t-test for turbidity resulted in no statistical significance difference upstream and downstream of the outfall (i.e. two-tailed p value of 0.98 compared to a alpha value of 0.5). The data on 2/3/2017 was excluded from the statistical analysis as sample data is not representative of typical stream conditions (i.e. stream greater than 7 times more turbid) and could be due to variations due to randomness of sampling.
[3] Not sampled or analytical error.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA's Environmental Justice policy establishes fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. As part of the environmental permitting process, EPA considers cumulative environmental impacts to disproportionately impacted communities.

EPA conducted a screening level evaluation of vulnerabilities in the community posed to local residents near the vicinity of the permitted surface water treatment plant using EPA's EJSCREEN tool. The purpose of the screening is to identify areas disproportionately burdened by pollutant loadings and to consider demographic characteristics of the population living in the vicinity of the discharge when drafting permit conditions.

In Guam, EPA is aware of several environmental burdens facing communities including emissions from petroleum power generation, imminent Naval relocation and expansion, and bacteriological impairments for beaches across the territory. Guam has also experienced recent relocation of their primary landfill for industrial and municipal waste and received its first Municipal Separate Storm Sewer System ("MS4") permit in December 2018.

EPA is aware of the potential for cumulative burden of the permitted discharge on the impacted community and will issue this permit consistent with the CWA, which is protective of all beneficial uses of the receiving water, including human health. In addition to these permits, EPA provides support to GWA through compliance and State Revolving Funding assistance. Continued engagement across all water programs is critical to establish consistent expectations and resources to support water and wastewater infrastructure. In consideration of the above, EPA believes the permitted discharges should not contribute to undue incremental environmental burden and has made reasonable effort to ensure the community has, at a minimum, the same degree of protection as less burdened communities.

B. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of any listed or candidate species, or result in the destruction or adverse modification of critical habitat. To determine whether the discharge would affect any endangered or threatened species, EPA requested a species list from U.S. FWS and received a response on June 3, 2021 (reference number 01EPIF00-2021-SL-0304). A discussion of each of these species is below. The action area does not include any marine waters so it was unnecessary to request a species list from the National Marine Fisheries Service.

Table 5. Listed species for the action area designated under the U.S. Endangered Species Act

Type	Common Name	Scientific Name	Status and Critical Habitat[1]
Mammals	Mariana Fruit Bat	*Pteropus mariannus mariannus*	Threatened
Birds	Mariana Gray Swiftlet (yayaguak)	*Aerodramus vanikorensis bartschi*	Endangered
	Mariana Common Moorhen (pulattat)	*Gallinula chloropus guami*	Endangered
Invertebrates	Mariana eight-spot butterfly (ababang)	*Hypolimnas octocula marianensis*	Endangered
	Humped tree snail (alakeha)	*Partula gibba*	Endangered
	Guam tree snail (alakeh)	*Partula radiolata*	Endangered
	Fragile tree snail (alakeh)	*Samoana fragilis*	Endangered
Plants	Fadang	*Cycas micronesica*	Threatened
	No common name	*Phyllanthus saffordii*	Endangered
	No common name	*Tabernaemontana rotensis*	Threatened

[1] U.S. FWS confirmed that no designated critical habitat exists within or near the project site (i.e. action area).

Action and Action Area

The proposed action is reissuance of an NPDES permit authorizing discharges from the Ugum Surface Water Treatment Facility to Ugum River. The permittee is a minor discharger that discharges approximately 0.02 MGD, 2 miles upstream of Talofofo Bay. Ugum SWTF's discharge is a very small proportion (<0.5%) of the Ugum River's flow, and the river's flow is further diluted in the floodplain. Ugum SWTF's contribution to the floodplain is considered *de minimis*. No new construction, new pipelines, land, habitat, or hydrology alterations are associated with the permit reissuance.

The permit incorporates effluent limits and narrative conditions to ensure that the discharge meets GEPA WQS, without any mixing zones. The effluent limits in the permit will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species or impair any designated critical habitat. All effluent limits will apply at end

of pipe. The major pollutants of concern for this discharge include TSS and turbidity, which the discharger monitors in the receiving water. See Table 4 for receiving water monitoring data in the Ugum River.

The data indicate little to no impact to the receiving water within the surrounding waters (i.e. no significant difference using a paired t-test upstream and downstream of the outfall for either TSS or turbidity). The data indicate that discharge has no discernible effect on Talofofo Bay, so Talofofo Bay is not part of the action area. The action area includes the permitted facility and the Ugum River from the discharge point two miles downstream into the Talofofo floodplain.

Bats: Mariana Fruit Bat

The Mariana Fruit Bat (*Pteropus mariannus mariannus*) is listed as threatened due to habitat lost/degradation, over hunting, predation by the brown treesnake, and natural disturbances. The Mariana fruit bat is a medium-sized bat measuring 195 to 250 mm from head to rump, with a wingspan of 860 to 1065 mm. The males are slightly larger than the females. The abdomen and wings are dark brown to black with individual gray hairs intermixed throughout the fur. The mantle and sides of the neck are bright gold on most animals but in some individuals, this region may be pale gold or pale brown. The color of the head varies from brown to dark brown.

On islands inhabited by humans, bat colonies usually occur in remote sites, especially near or along clifflines. The Mariana Fruit Bat is known to forage on military lands and at the Guam National Wildlife Refuge, which are miles away from this facility's discharge. Therefore, there is little likelihood that the Maraina Fruit Bat will be present in the action area. Since the proposed action is related to the discharge of filter backwash water to the Ugum River, there is no direct impacts to this listed species. Further, the discharge will not indirectly affect the food or habitat as the Mariana Fruit Bat eats fruits, flowers, and leaves, and the Ugum River is not habitat for the species. EPA has determined that the action will not affect Mariana Fruit Bats. There is no designated critical habitat for the Mariana Fruit Bat in the action area. (US FWS 2009; US FWS 2012).

Birds: Two Endemic Bird Species

The Mariana Gray Swiftlet is listed as endangered. The Mariana Gray Swiftlet is a small, narrow winged bird with dark sooty gray above and grayish brown below. The species is endemic to the Mariana Islands and populations currently exist on Guam, Aguiguan, and Saipan. The Mariana Gray Swiftlet populations are known to occur in 3 locations on Guam, in natural and manmade caves. Guano of swiftlets have been found near Talofofo Bay.

The swiftlet nests and roosts in limestone caves in nests composed of moss held tightly together and sealed to the cave wall by hardened saliva. The species navigates through caves using echolocation. Swiftlets leave the cave early morning and early evening to drink and forage on insects over a wide variety of terrain and vegetation. The Mariana Swiftlet feeds on insect prey and invertebrates, preferring forest locations and captures these insects during flight. The most likely historical and current threats to the survival of the Mariana gray swiftlet are the disturbance of caves by human activity, predation by brown tree snakes, the historical use and

application of pesticides by the U.S. military, avian disease, the destruction of forests and habitats by typhoons, and the alteration of native habitats.

The Mariana Gray Swiftlet will have extremely limited exposure to the discharge authorized by the permit because the volume of discharge is low and it will be diluted by the flow of the Ugum River. Occasional exposure could potentially occur if the Mariana Gray Swiftlet drank from the Ugum River, however the TSS and turbidity levels resulting from the discharge are indistinguishable from the TSS and turbidity levels without the discharge, so the action would not affect Mariana Gray Swiftlets that drink water from the Ugum River. Additionally, because they are indistinguishable from background levels, TSS and turbidity from the discharge would not change the availability of insects that spend any portion of their lifecycle in the Ugum River and would therefore not affect the availability of prey for the Mariana Gray Swiftlet. Therefore, EPA has determined that the action will not affect the Mariana Gray Swiftlet.

The Mariana Common Moorhen is a non-migratory, wary bird found primarily at natural and manmade wetlands. They feed on a variety of plant and animal matter (most commonly aquatic plants, insects, berries, and invertebrates) located in and around the wetlands. Specifically, the Mariana common moorhen feeds by swimming and sticking its head under the surface to grasp plants or insect prey. The most serious threat to the Mariana Common Moorhen is the disappearance of suitable wetland habitat and hunting. (US FWS 1991). Talofofo floodplain wetlands could potentially support the species. The Ugum River contributes to the stagnant water in the floodplain and is one of many surface waters contributing to the floodplain. This action will not result in loss or degradation of wetland habitat. The outfall is about 2 miles upstream of the Talofofo Bay and the pollutants of concern are TSS and turbidity. The TSS limits of 30 mg/L for average monthly and 45 mg/L for a maximum daily and turbidity limit of 12.50 NTU as an instant max for the effluent are already lower than the concentrations that may cause sublethal effects and the effluent will be further diluted by the receiving water. (Gammon 1970, as cited in Kerr 1995; EPA 2003). The receiving water data shows no significant difference in TSS and turbidity as a result of the discharge, so the discharge would not affect the availability or health of the aquatic plants, insects, and other invertebrates in the Ugum River which are prey for the Mariana Common Moorhen. Therefore, EPA has determined that the action will not affect the Mariana Common Moorhen.

Invertebrates: Mariana eight-spot butterfly and three tree snails

The Mariana eight-spot butterfly was listed as endangered in 2015. A butterfly of the Nymphalidae family, the Mariana eight-spot butterfly is known solely from the islands of Guam and Saipan. Believed to be extirpated from Saipan, Guam remains its only known home in the world. The butterflies are primarily orange and black. Males are smaller than females and are mostly black with an orange stripe running vertically across the wings, in which the hindwings have small black dots. Adult females tend to lay their eggs on the edge of host plant leaves, and in clusters of one or two. Forest herbs, *Elatostema* and *Procris,* are vital food sources for the caterpillars of this endangered species. *Elatostema* is only found on karst substrate, often on limestone boulders. Procris also occurs on karst substrates but also as epiphytes on trees. *Procris* appears to fair better in sunny areas with less water. The action area does not include suitable habitat for the Mariana eight-spot butterfly so EPA has determined that the actionwill not affect this species or its habitat or food (i.e. *Elatostema* or *Procris*).

For the listed tree snails that could occur in the action area, all are tree-dwelling species and members of the Partulidae family of snails. All listed tree snail species are currently threatened by habitat loss and modification and by predation from several species. Predation by the nonnative rosy carnivore snail (*Euglandina rosea*), the nonnative Manokwar flatworm (*Platydemus manokwari*), and rats (*Rattus sp.*) is a serious threat to the survival of these listed tree snails. The humped tree snail may only be found only on the islands of Guam, Saipan, Sarigan, and Pagan andappears to show specificity to plant species, being found on only 5 of the surveyed 30 plant species during a study done in the early 1990s. (Hopper and Smith 1992). The Guam tree snail requires cool and shaded native forest habitat and is now known from 22 populations on Guam. The Guam tree snail does not appear to show plant species specificity being found on all 30 plant species surveyed. The fragile tree snail is found in forest ecosystems, most notably in the northern limestone plateau and was also found on only 5 of the surveyed plant species. (Hopper and Smith 1992). Generally, the fragile tree snail needs cool, shaded forest habitat with high humidity and reduced air movement that prevents excessive water loss.

The action area does not provide suitable habitat for these tree-dwelling snail species. Further, the major pollutants of concern will not affect the growing of suitable habitat for the listed species. EPA has determined that the action will not affect listed snail species in Table 5.

Plants: Three trees

The Fadang, *Phyllanthus saffordii*, and *Tabernaemontana rotensis*, are known from Guam. Fadang is under attack by the nonnative insect cycad aulacaspis scale, which is causing rapid mortality of the Fadang. As of January 2013, the Fadang mortality reached 92 percent on Guam. *Phyllanthus saffordii* is a woody shrub and is historically known from the southern part of Guam within the savanna ecosystem. *Phyllanthus saffordii* are at risk due to continued habitat loss and destruction from agriculture, urban development, nonnative animals and plants, fires, and typhoons, combined with habitat destruction and direct damage by recreational vehicles. *Tabernaemontana rotensis* is a small to medium sized tree and is widespread throughout the tropics/sub-tropics.

It was historically known from at least 250 individuals in Guam, with more than 21,000 individuals found throughout Andersen Airforce Base in 2007. *Tabernaemontana rotensis* populations of this species on Guam and Rota are at risk due to continued habitat loss and destruction from agriculture, urban development, nonnative animals and plants, fires, and typhoons; combined with ordnance and live-fire training. The greatest concern regarding this species is clearing and habitat loss due to the proposed airforce and Navy base expansions.

EPA notes that none of the listed tree species are associated with wetland or riparian environments that could be adjacent to the Ugum River and therefore would not occur in the action area. Further, the discharge's pollutants of concern,TSS and turbidity, would not affect the ability of the plant tree species to grow or be established. Therefore, EPA has determined that the action will not affect Fadang, *Phyllanthus saffordii*, or *Tabernaemontana rotensis*.

Summary: ESA No Effect Determination

As described above, EPA has determined that the action will not affect any threatened or endangered species. There is no designated critical habitat in the action area. EPA provided the Services with copies of this fact sheet and the draft permit during the public notice period. If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to federally listed species, EPA will contact the appropriate agency or agencies and initiate consultation, to ensure that such impacts are minimized or mitigated.

C. Impact to Coastal Zones

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA §§ 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR § 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

At this time, EPA has not received a consistency certification from the Guam Department of Commerce for the Ugum SWTP discharge. At the time the certification is received, EPA will review the certification and will make any necessary modification to the permit to ensure compliance with the Guam Coastal Management Plan.

D. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat (EFH).

The draft permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The draft permit does not directly discharge to areas of essential fish habitat. Therefore, EPA has determined that the draft permit will not adversely affect essential fish habitat.

E. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this draft NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

F. Water Quality Certification Requirements (40 CFR §§ 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, on the date of public notice, EPA requested certification from GEPA that the draft permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law. EPA cannot issue the permit until the certifying State, Territory, or Tribe has granted certification under 40 CFR § 124.53 or waived its right to certify. If the State, Territory, or Tribe does not respond within 60 days of the date of public notice it will be deemed to have waived certification.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR §§ 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR § 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR § 124.10)

Notice of the draft permit will be placed on EPA's website at https://www.epa.gov/npdes-permits/npdes-permits-epas-pacific-southwest-region-region-9, with a minimum of 30 days provided for interested parties to respond in writing to EPA. The draft permit and fact sheet will be posted on the EPA website for the duration of the public comment period. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

C. Public Hearing (40 CFR § 124.12)

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

XIII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this proposal may be directed to:

EPA Region 9
Becky Mitschele
mitschele.becky@epa.gov
(415) 972 – 3492

XIV. REFERENCES

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